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ABSTRACT

Education systems in the Atlantic Provinces are analyzed in this report to determine the state of their development, the nature and effect of the investment which is being made, and the factors which restrict the contribution of education systems to the development of human resource potential. Part One considers some of the factors which determine the environment within which the education systems operate and examines the relationships of socioeconomic and demographic variables to educational achievement. Part Two compares primary and secondary education in the Atlantic Provinces on an interprovincial and interregional basis. Part Three describes institutions of post-secondary education, their geographical distribution, library resources, qualifications of teaching staff, and financial inputs. Part Four examines school-age and university-age population projections and attempts to forecast enrollments to 1986-87 for each of the Atlantic Provinces. Nineteen tables are appended. (JH)

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ATLANTIC DEVELOPMENT BOARD

OTTAWA

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FOREWORD

This report is the fifth of a series initiated by the Atlantic Development Board to examine important aspects of the economy of the Atlantic Region. It was prepared as a background document for public discussion of regional development policies.

The Atlantic Development Board Act authorizes the Board to prepare "... an overall co-ordinated plan for the promotion of the economic growth of the Atlantic Region". The various studies that the Board has prepared provide the basic facts on which development policies will be formulated. They are being published to contribute to public understanding and discussion of the major policy issues in the economic development of the Atlantic Provinces.

This report examines three major aspects of education in the Atlantic Provinces. Parts One and Two focus on the primary and secondary components of the education system and on the effects of various demographic and economic factors on the outputs of that system. Part Three describes some of the features of post-secondary education. Part Four attempts to project enrolments and numbers of teachers into the 1980's. As a whole, the report brings together, for the first time, much current data on education in the region and identifies some of the major gaps in existing information.

The report combines a number of separate studies commissioned by the Atlantic Development Board. Major contributions were made by Dr. J.E. Cheal, Faculty of Education, Department of Educational Administration, University of Calgary; by Dr. H.W. Kitchen of Memorial University, Newfoundland; by Dr. C.B. Conway, Department of Education, Province of British Columbia; and by the Atlantic Provinces Economic Council in Halifax. Dr. D.E. Foohey co-ordinated the study for the Board and, with the editorial assistance of J.F. Kinzel, prepared it for publication.

The study was undertaken with the assistance of an intergovernmental advisory committee consisting of representatives of provincial and federal government agencies and non-governmental personnel:

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Their participation in an advisory capacity, of course, does not imply any measure of responsibility for the report or its findings.

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INTRODUCTION

This introduction presents in summary form the purpose and plan of the study. It outlines some of the current concepts of the role which education must play in preparing young people to take their place in a rapidly changing, highly industrialized and highly urbanized society and it discusses the scope and sequence of the report.

Human Resource Development

The key to all progress - individual, social, economic, and political - is human resource development. This development involves the exploration, discovery, refinement, and utilization of untapped reserves of human talent. It requires research, organization and efficient management. It demands the investment of both physical and human capital. It is the most challenging responsibility of our society and the chief function of education.

World-wide recognition is now being given to the fact that the real wealth and security of any society lie in the human resources at its command. Natural resources and physical capital alone are not sufficient to ensure either economic progress or social well-being. Only human wisdom and skill can make these elements productive and direct them toward those ends which lead to both a higher standard of living and a more satisfying way of life.

Canadian society has long recognized the need for large investments in physical capital and natural resource development. It has been generally aware that there are great reserves of primary resources still to be discovered, explored or developed. Exploration, development and research are conceded to be activities essential for the growth of our economy. Major industries budget substantial sums for their support, and many firms devote themselves wholly to these aspects of production. There is increasing awareness also of the necessity of conserving our natural heritage through the careful husbanding and efficient utilization of our physical resources. The long-range needs of our economy for a dependable supply of these resources are readily acknowledged. Strenuous efforts are made to attract the needed investment capital - public and private, domestic and foreign - that our reserves of natural resources may be discovered, developed and conserved.

Canadians have been very much slower to recognize the significance to our national life of investment in human capital and the development of human resources. Long-range educational planning has been almost nonexistent. Research and development have been treated as unnecessary frills which taxpayers could hardly afford. Our society has been content with only a surface assessment of its human resources and has attempted to meet conspicuous shortages of educated manpower by immigration rather than by investment. Only in recent years has the rapid urbanization and industrialization of our national life resulted in economic, political and social problems which have forced us to awaken to the urgent demand for human resource development. Only as the full potential of each member of society is realized and developed can those individual and national problems be resolved which stem from inadequate skills, limited understandings and a restricted world view.

Education has too long been viewed by Canadian society as only a consumer good, as an institution whose prime function is to perpetuate the values and transmit the culture of previous generations. To education has been assigned the traditional task of cultivating elites - social, economic or intellectual. But this view of education and its function is no longer adequate. Education must be relevant to today's demands. Literacy alone is not enough. Opportunities for further education cannot be restricted to the few. Today, only the fullest development of all human talents will meet the needs of society and satisfy the demands of the individual.

Economists are now beginning to recognize the importance of education as a major producer good. Its significant contribution to the growth of the economy is being realized. While losing none of its cultural value to the individual or society, education is being acknowledged as a form of human capital which produces a rate of return as high as that accruing to physical capital. Without sufficient investment in human capital the growth of the economy is retarded. Without sufficient knowledge and skill development, the individual is unemployable. To be relevant to today's demands education must not only provide a link to the past but it must also provide a bridge to the future. "From the economic and social standpoint, a country's educational system is its main means both of perpetuating the values and skills of its population, and of preparing it for the changes which progress requires."[1]

The Goals of Education

The goals of education have been the subject of much discussion and debate since antiquity. The philosophical aims of education and its operational objectives are subject to review and redefinition as changing conditions demand new emphases. Two dominant themes, however, continue to present themselves in all discussions of educational goals: education for personal development and education for social competence.

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[1] Economic and Social Aspects of Educational Planning. UNESCO, 1964. p. 11.

The personal goals of education are those which relate to the development of attributes and abilities which enable the individual to have a successful and satisfying life experience. The social goals of education are those which relate to the needs of the social, political and economic institutions of society. These two sets of goals are not mutually exclusive, there are many interrelationships. They do suggest different emphases, however, and some balance must be maintained between them.

Associated with each of these general goals of education are both cultural and economic aspects. In order to achieve the personal goals of education not only must the talents of the individual be discovered and developed, and some understanding and appreciation of his cultural heritage be established, but the knowledge and skills necessary to enter the labour force and earn the economic means to satisfy basic needs and wants must also be acquired. In providing a program which will meet the social goals of education it is necessary to include not only those experiences which contribute to the perpetuation and development of our social and political institutions, but also those which will meet the changing needs of the economy.

Education and the economy may be seen as two institutions of our society which have a reciprocal relationship, the output of one contributing to the input of the other. The levels of schooling attained by entrants into the labour force have been found to be important determiners of its productivity. Productivity, in turn, affects levels of income, and income levels largely determine expenditure on education. Expenditure levels on education are highly associated with the output levels of the educational system, that is with the levels of schooling of those entering the labour force. Where levels of schooling are low, productivity and income are low, and ability to make expenditures on education is also low. Where levels of education and income are higher the greater ability to invest in education is usually accompanied by a greater desire to do so. Its value as a form of investment is more readily seen and appreciated.

There are three levels of education which have a direct or indirect relationship to levels of occupation and income. These are elementary, secondary, and post-secondary education. Although the direct relationship between the various forms of post-secondary education and levels of occupation and income in the labour force is readily apparent, the more indirect relationships between elementary and secondary education and occupation and income are no less significant. It is at these levels that attitudes and skills, as well as basic knowledge and concepts, are established. Success in the higher levels of education and in the labour force, may depend very considerably on the strength of the foundation which has been laid at these lower levels.

The allocation of resources among the various levels of education involves policy decisions which must take into consideration both the stage of development through which the economy is passing and the stage of development through which education is passing. An economy which has evolved to the point where its use of technology demands a large number of technical and middle-management personnel will have to make a larger allocation of its resources to the post-secondary sector. However, if low levels of investment in elementary and secondary education have produced high dropout rates so that insufficient numbers of students are eligible to enter post-secondary programs, larger inputs of resources may first have to be allocated to those sectors before further investment in post-secondary education is profitable.

Very often enlarged economic opportunities have to be visible on the horizon before individuals or societies recognize the need for a greater investment of time, energy and resources in education. The establishment of new industries may provide occupational opportunities which, in time, will create incentives for further education investment. On the other hand, the provision of new educational facilities, particularly for post-secondary education, may create a demand for educational opportunities which had not existed before. The more education a society has, the more it is likely to demand, and the greater will be its willingness and ability to pay for it.

Since the demand for education is strongly influenced by the distance between the consumer and the location of the educational institutes, a concentration of activities and population in larger "growth centres" will raise demand appreciably. Not only is per-capita demand for education greater in larger centres, but it is also more varied. The supply of educational facilities makes the area more attractive to industry and thereby contributes indirectly to the area's welfare. This is especially the case with industries that employ large numbers of professional and semi-professional workers. Such workers are highly mobile and are also likely to demand superior educational facilities for themselves and their children.

While the economic aspects of education are receiving increasing recognition, and are of particular interest to educational planners, its consumer aspects have lost none of their significance. The growing personal and social ills associated with our highly industrialized and urbanized society emphasize the necessity of recognizing and re-examining the cultural goals of education. It is impossible, of course, to attain the economic goals of education without achieving at the same time some of the social goals, or to attain the cultural goals without achieving some of the economic goals, but both need specific consideration and continual re-evaluation.

> In developing manpower for economic growth, education need not neglect the development of the individual and the higher aims of society; in strengthening science and technology, it need not weaken the humanities; in

adopting modern methods, it need not abandon the best of the old. But the necessity of adjusting to an age of development and of expanding educational opportunities for everyone, forces us all to re-examine critically the educational legacies of the past, to dig fearlessly beneath old labels and practices, and to take calculated risks with promising new methods and concepts. There are certainly dangers in too narrow an interpretation of the role of education, in too great an emphasis on education as a source of qualified manpower. But there is the even greater danger of failing to admit that much of what goes on in the name of education today serves none of the great aims of education well enough, neither those which are stressed by the economists, nor those, more traditional ones, which educators are rightly anxious to preserve.[1]

Assumptions and Implications

Underlying these statements of educational objectives are certain basic assumptions, and growing out of them are certain implications for educational practice. The assumptions may be listed as follows:

1) All Canadians, regardless of cultural background or geographic location, have an equal right to educational opportunities.

2) Equality of opportunity implies not necessarily the same education for all, but equal opportunity to develop individual potential.

3) The educational system must provide an educational program which will meet the changing cultural needs of individuals and of society.

4) The educational system must provide an educational program which will meet the changing economic needs of individuals and of society.

5) The elementary and secondary sectors of the education system must provide that foundation of knowledge, skills, and attitudes which will permit successful entry into post-secondary education or into the labour force.

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[1] Problems and Strategies of Educational Planning: Lessons from Latin America. UNESCO: International Institute for Educational Planning, 1965. p. 10.

6) The secondary and post-secondary sectors of the educational system must provide appropriate general education to enable members of the labour force to adapt to changing conditions through further training, or retraining.

7) The educational system should include in its program those experiences which will allow its graduates to understand and provide solutions for the social problems of an urbanized and industrialized society.

Acceptance of the above list of assumptions, which underlie the stated goals of education, has the following general implications for educational practice:

1) The teaching profession must have a clear understanding of the generally accepted goals of education and sufficient professional competence to be able to operationalize them.

2) The instructional program must be broad enough to encompass these aims and sufficiently comprehensive to take care of a wide range of differences among the needs, abilities and interests of individual students and communities.

3) The teaching profession must have sufficient professional preparation and specialized skills to adapt both programs and methodology to these pupil and community differences.

4) Instruction must be of such a calibre that a high percentage of pupils are retained through the secondary school program and leave with a desire to continue their education, either formally or informally, during their adult lives.

5) Adequate resources of materials, facilities, and instructional personnel must be available to make effective educational programs possible.

6) Facilities for a wide variety of educational opportunities at the secondary and post-secondary levels must be provided in such a manner that geographic location, economic ability or cultural background do not restrict entry.

Plan of the Report

The series of studies reported here is broadly concerned first with an analysis of the education systems of the Atlantic Provinces to determine the state of their development, the nature and effect of the investment which is being made, and the factors which restrict the contribution of the education systems to the development of the Region's human resource potential. Second, an attempt is made to project future needs in terms of student enrolments and teacher requirements through the post-secondary level.

Part One considers some of the factors which determine the environment within which the education systems operate. Specifically, it looks at socio-economic and demographic variables in each of the Atlantic Provinces and examines their possible relationships to educational achievement (i.e., to certain measures of output of the education systems). In a sense, it serves as a warning that to increase educational inputs alone may not be enough; broader social and economic needs must be considered as well.

Part Two examines primary and secondary education in the Atlantic Provinces. Input and output variables of the education systems of the Atlantic Provinces and of the four Western Provinces are compared on an interprovincial and interregional basis. "Input" and "output" variables are defined in appropriate sections. In general, inputs include pupils (education need and education load), teachers (numbers, distribution and qualifications), and financial expenditures. School size is also given limited consideration as an input, and reference is made to school organization. The definition and measurement of educational output is one of the most difficult problems in research. For the purposes of Part Two, pupil retention and grade completion rates are used as the main output measures. Retardation - used as a negative measurement of output - refers to pupils one year or more older than the modal group for any grade. Retardation is related to school failure.

Part Three turns to a consideration of post-secondary education - principally universities, colleges and technical institutes. The institutions and their geographical distribution are described, together with a brief report on library resources. Characteristics and qualifications of teaching staff are examined and university teachers' salaries in the Atlantic Provinces are compared to those in other Canadian regions. Financial inputs are briefly analysed.

The concluding part, Part Four, examines school-age and university-age population projections and attempts to forecast enrolments to 1986-87 in each of the Atlantic Provinces in two categories: (1) elementary and secondary combined, and (2) post-secondary. Future numbers of teachers in the two categories are also estimated, and, for elementary and secondary schools, annual additions to teaching staff are forecast.

Throughout the study, every attempt has been made to present the most recent data available. Despite these attempts, some information unavoidably refers to periods four and five years prior to the date of publication. However, the relative positions described are still very much the same.

Among the several aspects of education not considered in this report is technical and vocational training (except for certain post-secondary technical institutes). Demand for and supply of skilled manpower in the Atlantic Provinces is the subject of a separate report not yet published.

DEMOGRAPHIC AND SOCIO-ECONOMIC FACTORS RELATED TO EDUCATION

PART ONE

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PART ONE

DEMOGRAPHIC AND SOCIOECONOMIC FACTORS RELATED TO EDUCATION

There is evidence that today's educational problems in the Atlantic Provinces are rooted in the whole way of life of the region, including the low educational attainment of earlier generations. Specifically, low educational outputs and high retardation[1] rates appear to be related more to socioeconomic and demographic factors, such as adult illiteracy, family size and non-employment, than to such educational factors as the qualifications and salaries of teachers. These problems, as manifested in the Atlantic Region, are examined in the sections below.

Within New Brunswick, differences in high school retention rates among counties were found to be related more highly to family size and to percentage of adult illiteracy than to teacher qualifications and salaries. Similarly, in Newfoundland, correlations suggest the crux of lower educational productivity to be the non-literate environments provided by many of the smaller outports. The analysis for Nova Scotia presented a less clear picture of the variables underlying differences in the educational output of the various counties; there were, however, suggestions that output is lower in those counties characterized by relatively larger families, greater illiteracy and lower levels of employment. For Prince Edward Island, with only three counties, correlational analysis was not useful.

Over-all analysis of the 45 counties and census divisions of the Atlantic Provinces again suggested that retention and progress in school are related more highly to socioeconomic variables than to variations in educational input. Similar data emerge from comparisons among the ten provinces. For the three five-year periods 1951-56, 1956-61, and 1961-66, there has been migration from each of the Atlantic Provinces and from almost all of their census divisions and counties.

It follows that successful attempts to increase educational output must probably go beyond the raising of teachers' salaries and qualifications, important as these are. The more basic problems of chronic non-employment, adult illiteracy, fatalism, and large families are even more critical, and ways to counteract their effects upon each succeeding generation will need to be found.

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[1] "Retardation" refers to those students who, for whatever reason, are over-age relative to the norm for a particular grade.

The remainder of this Part is divided into three sections. The first is a compilation of data for the Atlantic Provinces on demographic and socioeconomic variables, most of which have been identified by studies elsewhere as being related to educational productivity. The second section reports the relationships that were found for the Atlantic Provinces between seven measures of educational output and 20 demographic and socioeconomic measures that were classified as inputs. Finally, the findings are briefly summarized.

1. DEMOGRAPHIC AND ECONOMIC ASPECTS

Studies conducted elsewhere have presented rather strong evidence that educational achievement is related directly to the economic well-being of the community (Rossi, 1961; Bloom et al., 1965), to the socioeconomic status of the family (Davis, 1948; Eells et al., 1951), and to the degree of literacy of the child's environment - particularly his home (Robinson, 1946), but inversely to size of family (Nisbet, 1961). In urban areas, educational achievement is usually higher than in small towns or rural areas (Downey, 1965). Children from homes whose language is other than the dominant one are often at an educational disadvantage (Nisbet, 1961).

In this section data on factors similar to those cited above are examined for the Atlantic Provinces. Included are: the extent of illiteracy in each of the provinces; family size; the proportion of the population living in small settlements; and characteristics of the labour force, including personal income. Data are also presented on the extent of emigration.

Educationally Deprived Environment

A factor that will be identified later as relating strongly but inversely to educational output in the Atlantic Provinces is educational deprivation, or illiteracy and functional illiteracy, in the social environment. Educationally deprived environment is most acute in Newfoundland and New Brunswick, among older people, in smaller communities.

Table 1-1 indicates that, in 1961, in both Nova Scotia and Prince Edward Island, the illiterate plus the functionally illiterate comprised a proportion of the population similar to that in Canada as a whole. However, rates for New Brunswick were almost 50 per cent above the national average; for Newfoundland, more than 100 per cent. Moreover, all four Atlantic Provinces were below the national average in the proportion of people who have attended university.

TABLE 1-1

Percentages of Population who are Illiterate, Functionally Illiterate, and University Educated, Atlantic Provinces, 1961

	Illiterate	Functionally Illiterate	Illiterate plus Functionally Illiterate	University Educated
	%	%	%	%
Nfld.	8.1	18.4	26.4	3.1
P.E.I.	3.4	6.4	9.8	4.2
N.S.	4.2	6.7	10.9	5.0
N.B.	5.0	10.7	15.7	4.5
Canada	2.8	8.0	10.8	6.0

Source: Derived from Census of Canada, 1961. Percentages are based on the population 6 years and over not at school. In the census, the terms "no schooling" and "having less than Grade 5" are used instead of "illiterate" and "functionally illiterate".

Newfoundland

Table 1-2 shows how illiteracy and functional illiteracy were distributed among Newfoundland's census divisions. Everywhere - except on the Avalon Peninsula and in the areas of Corner Brook and Grand Falls - one-third of the non-school population above five years of age was functionally illiterate.[1] In six of these divisions, fewer than 2 per cent had ever attended university, a rate just one-third the national average.

Tables 1-3 and 1-4 indicate that, in 1961, illiteracy was much more prevalent in the smaller settlements of the province where 27 per cent of the population above 10 years of age was illiterate or functionally illiterate, compared to less than half that rate in the larger settlements, and to less than one-quarter that rate in St. John's. Later it will be shown that when the degree of illiteracy or functional illiteracy of the census divisions in Newfoundland was related to the percentage of people in the divisions living in settlements under 1,000 population, the correlation was found to be very high (.91).

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[1] Differences may be attributable in part to differences in the age at which children are admitted into school.

TABLE 1-2

Percentages of Population who are Illiterate, Illiterate or Functionally Illiterate, and University Educated, Census Divisions of Newfoundland, 1961

Census Division	Illiterate	Illiterate plus Functionally Illiterate	University Educated
	%	%	%
1	8.4	21.3	3.8
2	13.9	37.7	1.9
3	17.1	44.5	1.3
4	15.5	34.5	2.5
5	10.4	24.1	3.4
6	8.3	21.4	4.2
7	11.9	37.8	1.4
8	12.5	38.9	1.3
9	16.7	43.6	1.2
10	17.2	33.7	4.5
Newfoundland	11.0	28.8	3.0

Source: Derived from Census of Canada, 1961. Percentages are based on the population 5 years and over not at school.

TABLE 1-3

Proportions of Population who are Illiterate, by Rural-Urban Residence and by Age Group, Newfoundland, 1961

Age Group	Settlements under 1,000	Settlements 1,000 and over	St. John's	All Newfoundland
	%	%	%	%
10-14	0.5	0.4	0.3	0.5
15-19	0.7	0.4	0.2	0.5
20-24	1.7	0.5	0.2	1.0
25-34	3.7	1.3	0.7	2.4
35-44	6.7	2.9	1.1	4.6
45-64	9.4	4.5	1.9	6.8
65+	23.1	12.7	5.9	18.2
All ages (10+)	5.9	2.6	1.3	4.2

Source: Derived from Census of Canada, 1961. Percentages are based on the population aged 10 and over.

TABLE 1-4

Proportions of Population who are Illiterate or Functionally Illiterate, by Rural-Urban Residence and by Age Group, Newfoundland, 1961

Age Group	Settlements under 1,000	Settlements 1,000 and over	St. John's	All Newfoundland
	%	%	%	%
10-14	1.9	1.1	0.7	1.6
15-19	3.4	1.4	0.8	2.3
20-24	7.9	2.4	1.1	4.8
25-34	19.0	7.8	3.2	12.8
35-44	36.9	15.6	6.3	25.4
45-64	45.2	22.6	10.1	33.6
65+	64.9	40.9	22.2	53.9
All ages (10+)	26.7	11.7	6.0	18.0

Source: Derived from Census of Canada, 1961. Percentages are based on the population aged 10 and over.

Noteworthy also was the tendency for illiteracy and functional illiteracy to be more prevalent in older age groups, that is, among the grandparents of today's young children, the parents of today's high school pupils.

Thus, illiteracy in Newfoundland was double the national average and was more than twice as prevalent in smaller settlements as in larger ones. In these smaller settlements (where 47 per cent of the people of Newfoundland lived in 1961) 40 per cent of those over 25 years of age were functionally illiterate, 52 per cent of those over 45. It is in these small settlements that the schools face a tremendous challenge, especially since it is in these places that problems of teacher supply and school plant are most acute.[1]

New Brunswick

Illiteracy and functional illiteracy, as shown in Table 1-5, were much less prevalent in New Brunswick than in Newfoundland, with only the two counties of Kent and Gloucester having one-third or more of their non-school population above five years old in these categories. Only in Kent had fewer than 2 per cent of that group been to university. However, when compar-

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[1] For supporting data, see Newfoundland and Labrador (1967) and Kitchen (1966a).

TABLE 1-5

Percentages of Population who are Illiterate, Illiterate or Functionally Illiterate, and University Educated, Counties of New Brunswick, 1961

County	Illiterate	Illiterate plus Functionally Illiterate	University Educated
	%	%	%
Albert	6.6	11.4	5.8
Carleton	6.7	12.4	4.1
Charlotte	5.3	9.7	4.1
Gloucester	15.3	37.7	2.4
Kent	12.8	34.2	1.4
Kings	5.8	11.3	5.8
Madawaska	13.3	30.7	3.9
Northumberland	9.8	21.7	3.1
Queens	6.5	16.1	3.1
Restigouche	14.3	29.3	3.1
Saint John	5.7	10.8	5.0
Sunbury	8.8	16.1	3.3
Victoria	10.4	22.4	4.0
Westmorland	6.8	14.2	5.3
York	5.7	11.0	6.7
New Brunswick	8.8	19.0	4.3

Source: Derived from Census of Canada, 1961. Percentages are based on the population 5 years and over not attending school.

ed to the national average of 13.4 per cent illiterate or functionally illiterate, seven other New Brunswick counties exceeded the national average. These nine counties comprise the northeastern two-thirds of the province. Similarly, all counties but Albert, Kings and York were below the national average with respect to the proportion of people who had attended university.

Table 1-6 indicates that, as in Newfoundland, the prevalence of illiteracy in settlements under 1,000 was more than double the rate for larger settlements. Also, it was more prevalent among older people, those of the age to be parents or grandparents. In the smaller settlements, where 43 per cent of New Brunswickers lived in 1961, 21 per cent of those who had reached 25 years of age were illiterate or functionally illiterate, 28 per cent of those who had reached 45. About 10 per cent of New Brunswick's population were classified as farm dwellers in 1961. Of those aged 25 and over, 18 per cent were illiterate or functionally illiterate compared to 22 per cent of those who had reached 45.

TABLE 1-6

Proportions of Population who are Illiterate or Functionally Illiterate, by Rural-Urban Residence and by Age Group, New Brunswick, 1961

Age Group	Farms	Settlements under 1,000	Settlements 1,000 and over	Saint John	All N.B.
	%	%	%	%	%
10-14	0.9	1.5	0.8	1.0	1.1
15-19	2.7	4.1	1.5	0.7	2.8
20-24	4.7	6.6	2.0	1.3	4.1
25-34	10.6	12.4	4.0	3.0	8.0
35-44	12.9	17.2	6.0	4.6	11.2
45-64	19.1	24.6	10.7	7.5	17.1
65+	27.9	33.9	17.6	10.9	25.7
All ages (10+)	11.7	14.4	6.3	4.6	10.3

Source: Derived from Census of Canada, 1961. Percentages are based on the population aged 10 and over.

Thus, in rural New Brunswick, particularly in the small settlements, and especially in the counties of the northeast, the schools with meagre resources of personnel and equipment must contend against an educational environment that was severely disadvantaged in 1961 and, presumably, remains relatively disadvantaged today.

Prince Edward Island

The incidence of illiteracy in Prince Edward Island was below the national average and only 60 per cent of that in New Brunswick (Table 1-7). Farm dwellers in this province, as indicated in Table 1-8, tended to resemble the inhabitants of the larger towns with respect to this variable. However, in small towns, where one-third the people lived in 1961, the incidence was double that of larger towns. Moreover, in Kings and Prince counties, the proportions with university education were, at 2.0 and 2.8 per cent, far below the national average.

TABLE 1-7

Percentages of Population who are Illiterate, Illiterate or Functionally Illiterate, and University Educated, Counties of Prince Edward Island, 1961

County	Illiterate	Illiterate plus Functionally Illiterate	University Educated
	%	%	%
Kings	6.3	13.4	2.0
Prince	6.8	14.5	2.8
Queens	5.5	10.1	6.0
Prince Edward Island	6.1	12.3	4.1

Source: Derived from Census of Canada, 1961. Percentages are based on the population 5 years and over not at school.

TABLE 1-8

Proportions of Population who are Illiterate or Functionally Illiterate, by Rural-Urban Residence and by Age Group, Prince Edward Island, 1961

Age Group	Farms	Settlements under 1,000	Settlements 1,000 and over	All P.E.I.
	%	%	%	%
10-14	1.0	1.3	0.8	1.1
15-19	1.3	3.1	0.9	1.7
20-24	2.5	3.8	1.1	2.4
25-34	3.5	6.1	2.4	4.1
35-44	4.2	8.0	3.3	5.2
45-64	7.0	14.9	6.1	9.2
65+	9.3	16.2	11.7	12.6
All ages (10+)	4.6	8.5	4.0	5.7

Source: Derived from Census of Canada, 1961. Percentages are based on the population aged 10 and over.

Nova Scotia

Nova Scotia had less illiteracy and functional illiteracy than the other Atlantic Provinces. However, there were counties above the national average for both categories combined (Table 1-9), notably Richmond (24 per cent), Guysborough (21 per cent) and Inverness (19 per cent). Only 1.9 per cent of the population of Richmond county had attended university. Apart from Antigonish, Halifax, and Kings, all counties were below the national average on university attendance.

In Nova Scotia, illiteracy was more prevalent on farms and in small communities than in the larger settlements (Table 1-10).

TABLE 1-9

Percentages of Population who are Illiterate, Illiterate or Functionally Illiterate, and University Educated, Counties of Nova Scotia, 1961

County	Illiterate	Illiterate plus Functionally Illiterate	University Educated
	%	%	%
Annapolis	3.5	8.1	4.7
Antigonish	5.2	12.4	8.7
Cape Breton	4.9	12.5	3.6
Colchester	3.2	7.3	4.4
Cumberland	4.1	10.8	3.6
Digby	4.7	16.3	3.0
Guysborough	6.5	20.9	2.2
Halifax	4.0	8.1	7.5
Hants	4.0	10.3	3.9
Inverness	5.9	19.1	2.9
Kings	4.1	8.9	6.1
Lunenburg	3.7	14.8	2.8
Pictou	3.4	8.9	3.5
Queens	5.2	15.4	3.9
Richmond	7.1	24.3	1.9
Shelburne	3.8	12.5	2.5
Victoria	5.2	14.8	2.7
Yarmouth	4.9	14.2	3.2
Nova Scotia	4.3	11.0	5.0

Source: Derived from Census of Canada, 1961. Percentages are based on the population 5 years and over not at school.

TABLE 1-10

Proportions of Population who are Illiterate or Functionally Illiterate, by Rural-Urban Residence and by Age Group, Nova Scotia, 1961

Age Group	Farms	Settlements under 1,000	Settlements 1,000 and over	Halifax	All N.S.
	%	%	%	%	%
10-14	1.5	0.9	0.9	1.0	1.0
15-19	2.3	2.0	1.0	0.5	1.5
20-24	5.2	3.2	1.3	0.8	2.1
25-34	6.8	4.9	2.7	2.2	3.7
35-44	7.1	7.3	3.5	2.9	5.2
45-64	11.8	13.9	7.5	5.7	10.2
65+	18.9	23.0	15.8	10.9	19.1
All ages (10+)	8.8	8.4	4.7	3.4	6.4

Source: Derived from Census of Canada, 1961. Percentages are based on the population aged 10 and over.

Family Size

An important variable underlying educational output, as indicated earlier in this chapter, is family size, particularly number of children. Table 1-11 indicates a major difference in 1961 between the family in the five eastern provinces and the family in the five western provinces: the family of eastern Canada contained 0.5 children more. Also, there were more multiple family households. Newfoundland was most atypical, with at least 0.5 more children per family than the other Atlantic Provinces and at least 1.0 child more per family than the five western provinces. Also in Newfoundland there were 50 per cent more multiple-family households than in the other Atlantic Provinces, about three or four times as many as in western Canada. Newfoundland was unique in Canada in that for every three households there was a person other than father, mother and children. Presumably, these extra persons comprised,to a large extent, grandparents and unmarried siblings of father or mother. Thus two factors - higher incidence of adult illiteracy and greater numbers of adults per household - combined to provide for the child of the Atlantic Provinces, especially in Newfoundland, a far greater probability than for the child of western Canada of being reared in an educationally deprived home environment.

TABLE 1-11

Differences in Family Size among the Provinces of Canada, 1961

Province	Households With Two or More Families	Persons per Household	Children per Family	Extra Persons per Household*
	%	no.	no.	no.
Nfld.	7.5	5.0	2.7	0.3
P.E.I.	5.0	4.2	2.2	-
N.S.	4.8	4.0	2.0	-
N.B.	4.6	4.4	2.3	0.1
Qué.	3.3	4.2	2.2	-
Ont.	4.6	3.7	1.6	-0.1
Man.	3.1	3.7	1.7	-
Sask.	1.9	3.6	1.8	-0.2
Alta.	2.1	3.7	1.8	-0.1
B.C.	2.3	3.4	1.6	-0.2
Canada	3.7	3.9	1.9	-

* "Extra Persons per Household" refers to persons other than one average family of two parents plus children.

Source: Derived from Census of Canada, 1961.

Small Towns

Small towns of several hundred people often pose serious educational problems. Farm dwellers usually send their children willingly to consolidated elementary or secondary schools, for it is obvious to farmers as well as to educators that a farming community is not a viable educational unit today. Neither is a small town. But this is rarely acknowledged by residents. As small towns become less viable economically, and as roads and communications media render them less significant as social units, often the school becomes an increasingly important symbol of the town's identity, something that must be retained if at all possible. As selective mobility operates to take the capable young to the city or to other parts of the nation, educational decisions tend to be made by those to whom local tradition is important. Often, small inadequate schools are retained for other than educational reasons.

A recent Newfoundland study found that the more the high school pupils were involved in small communities, especially small isolated outports, the more involved with adult illiteracy and the less with urban and literate environments, then the more fatalistic they were, the less able to see themselves as improving their "lot" (Kitchen, 1966b). Thus fatalism is added to the impediments to education in small towns.

The Atlantic Provinces are full of small towns. This is perhaps the most striking aspect of the demography of the area. Those living in settlements under 1,000 in 1961 (classified in the census as "rural non-farm") comprised 35 to 47 percent of the population in the Atlantic Provinces, about double the proportion elsewhere in Canada. Conversely, there were comparatively few people in the Atlantic Provinces who lived in large settlements (Table 1-12).

TABLE 1-12

Per Cent of Population in Communities of Various Sizes, Provinces of Canada, 1961

Province	Rural Non-Farm	Urban	In Centres of 10,000 or more	In Centres of 100,000 or more
	%	%	%	%
Newfoundland	47	51	29	-
Prince Edward Island	35	32	18	-
Nova Scotia	38	54	44	38
New Brunswick	43	47	33	-
Québec	15	76	63	50
Ontario	15	77	67	48
Manitoba	18	64	56	51
Saskatchewan	24	43	27	12
Alberta	15	63	51	46
British Columbia	23	73	63	53
Canada	19	70	59	43

Source: Derived from Census of Canada, 1961.

Economic Factors

More than ten years ago the Royal Commission on Canada's Economic Prospects (1957) commented on the low incomes in the Atlantic Provinces, and suggested some underlying causes:

> As previously noted, one of the most striking features of the economy of the Atlantic Provinces is the disproportionately large number of people engaged in marginal activities, subsistence farming, fishing and logging, or some combination of these. Such occupations are the source of the low incomes which seriously affect average earnings in the region.

Tables 1-13, 1-14, and 1-15 provide 1961 and 1964 data from which several conclusions can be drawn to support the views of the Royal Commission.

1) There are proportionately fewer people of the usual working age of 20-64 in the Atlantic Provinces than elsewhere in Canada. Families of the Atlantic Provinces, especially in Newfoundland and New Brunswick, have more children, and therefore a smaller proportion of adults than families elsewhere in Canada.

2) Smaller proportions of males and females in the Atlantic Provinces work, that is, form part of the labour force, especially in Newfoundland. Jobs for females in the Atlantic Provinces tend to be more restricted than elsewhere to professions such as school teaching and nursing.

3) Of the males working for wages, smaller proportions in the Atlantic Provinces than elsewhere are employed on a regular basis.

4) Levels of salaries and wages are considerably lower in the Atlantic Provinces, especially in Prince Edward Island.

5) Total personal income per capita is lower in the Atlantic Provinces, being less than two-thirds that of Ontario in 1964.

6) Not only is earned income less in the Atlantic Provinces, but government transfer payments are no higher. Indeed, for Newfoundland, transfer payments per capita in 1964 were the lowest in Canada.

7) Even when the greater size of the Atlantic family is taken into account, personal income per household is still less than 80 per cent of the Canadian average, less than 70 per cent of Ontario.

TABLE 1-13

Characteristics of the Male Work Force, Provinces of Canada, 1961

Province	% of Population Aged 20-64	Male Labour Force as % of Males 20-64	% Male Wage Earners Regularly Employed*	Average Male Salaries & Wages
	%	%	%	$
Nfld.	42.7	86.8	55.1	2,823
P.E.I.	45.0	106.9	56.4	2,359
N.S.	47.9	99.5	69.0	3,021
N.B.	45.2	97.4	61.8	2,807
Qué.	49.9	99.2	69.6	3,469
Ont.	52.7	103.0	75.9	3,984
Man.	50.7	104.1	72.0	3,574
Sask.	48.8	106.4	67.3	3,290
Alta.	50.3	104.1	71.6	3,733
B.C.	51.7	98.8	70.5	4,004
Canada	50.6	101.2	71.7	3,679

* Regularly employed means at least 40 weeks annually, at least 35 hours weekly.

Source: Derived from Census of Canada, 1961. Subprovincial data are contained in Appendix Table A-3.

TABLE 1-14

Characteristics of the Female Work Force, Provinces of Canada, 1961

Province	Female Labour Force as % of Females 20-64	% Female Work Force in Professions	Annual Average Female Salaries and Wages
	%	%	$
Nfld.	25.3	19.8	1,446
P.E.I.	35.5	19.7	1,285
N.S.	33.6	20.3	1,607
N.B.	34.1	19.8	1,569
Qué.	36.2	n.a.	1,920
Ont.	42.4	n.a.	2,119
Man.	41.7	n.a.	1,902
Sask.	35.3	n.a.	1,974
Alta.	39.5	n.a.	2,001
B.C.	37.6	n.a.	2,096
Canada	38.6	15.4	1,995

Source: Derived from Census of Canada, 1961. Subprovincial data are contained in Appendix Table A-4.

TABLE 1-15

Personal Income Per Capita and Components, by Provinces, 1964

Province	Total Earned Income	Investment Income	Government Transfer Payments	Total Personal Income	Personal Income per Household
	$	$	$	$	$
Nfld.	829	59	187	1,065	5,300
P.E.I.	850	93	234	1,224	5,100
N.S.	988	125	213	1,362	5,400
N.B.	930	97	227	1,246	5,500
Qué.	1,256	159	215	1,608	6,800
Ont.	1,674	258	209	2,125	7,900
Man.	1,399	193	218	1,796	6,600
Sask.	1,327	155	221	1,683	6,100
Alta.	1,422	171	214	1,793	6,600
B.C.	1,631	232	254	2,079	7,100
Canada	1,423	195	216	1,821	7,100

Source: Derived from National Accounts Income and Expenditure, 1964, D.B.S., and from Census of Canada, 1961.

Emigration

People have been migrating from the Atlantic Provinces to other parts of Canada and to the United States for many years. (Howland, 1957.) Table 1-16 indicates that in the periods 1956-1961 and 1961-66, there was net emigration from each of the Atlantic Provinces, and from all but Newfoundland in 1951-56.

Moreover, there was net emigration from nine of Newfoundland's ten census divisions in 1956-1961 and from eight in 1961-66 (see Appendix Table A-5). Labrador, because of the development of iron mines, experienced a net immigration. During 1951-56 there was net emigration from five census divisions, but not from the divisions containing the major urban centres (St. John's, Corner Brook, Grand Falls), nor from Labrador nor the St. Barbe Peninsula. Prince Edward Island experienced a net emigration from each of her three counties in each five-year period. For Nova Scotia, during 1961-66 there was net emigration from all 18 counties; during 1956-1961 from all but Halifax county (containing the city of Halifax); and during 1951-56 from all but Halifax, Kings, and Colchester (containing Truro). Net emigration took place in each of the three periods from 10 of New Brunswick's 15 counties. The exceptions were Albert, Kings, and York counties for all three periods, and for Saint John and Sunbury for 1951-56 and 1956-1961. Sunbury contains the recently established military base at Oromocto, and the others are in the vicinity of New Brunswick's three major cities of Saint John, Moncton and Fredericton. Thus, except for certain areas, mostly urban, emigration was widespread throughout the Atlantic Provinces in each third of the 15-year period ending in 1966.

TABLE 1-16

Net Migration*, Atlantic Provinces, 1961-66, 1956-61, and 1951-56

Province	Net Emigration (-) or Immigration (+)		
	1961-66	1956-61	1951-56
	%	%	%
Newfoundland	-5.2	-3.9	+0.5‡
Prince Edward Island	-4.4	-3.3	-8.2
Nova Scotia	-5.5	-3.3	-1.7
New Brunswick	-5.7	-3.0	-4.0
Canada	+1.4	+3.0	+4.3

* Expressed as a percentage (plus or minus) of the population in the base year.

‡ Immediately after Confederation in 1949, there was a substantial movement into Newfoundland from mainland Canada of government and business officials, and their families.

Source: Appendix Table A-5.

Table 1-17 shows that population increases were lower proportionately in the Maritime Provinces than for Canada as a whole in the period 1961-66, and for every decade but one since Confederation. In several of these decades Prince Edward Island showed declines in population and the other provinces such low increases that one can infer that the amount of emigration must have been substantial. Moreover, in 1951-1961, the decade of highest population increase since Confederation for Nova Scotia and New Brunswick, there was, as has been shown above, substantial emigration. This suggests that in at least some other decades the rate of emigration must have been even more substantial.

Appendix Table A-6 indicates that, with few exceptions, the counties of the Maritimes reflect the population changes of their provinces. However, Halifax county (containing Halifax and surrounding metropolitan area) has shown consistently higher population increases since Confederation than the province. In New Brunswick, Gloucester has consistently been growing more rapidly than the province. Restigouche and Madawaska have begun to taper off. In recent years, as has already been noted, the counties containing Saint John, Moncton, and Fredericton and their satellite communities have tended to increase more rapidly than the New Brunswick average.

TABLE 1-17

Population Increases in the Atlantic Provinces, 1961-66, and by Decades, 1881-1961

Province	1871 -1881	1881 -1891	1891 -1901	1901 -1911	1911 -1921	1921 -1931	1931 -1941	1941 -1951	1951 -1961	1961 -1966
	%	%	%	%	%	%	%	%	%	%
Nfld.*	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	27	8
P.E.I.	16	n.a.	-5	-9	-5	-1	8	4	6	4
N.S.	14	2	2	7	6	-2	13	11	15	3
N.B.	12	n.a.	3	6	10	5	12	13	16	3
Canada	17	11	11	34	22	18	10	22	30	10

* No information available prior to 1951.

Source: Derived from Census of Canada.

Cultural Integrity

The Atlantic Provinces and Québec differ from the rest of Canada in that few people reside there who were not born there (Table 1-18). As extremes, 97 per cent of the people residing in Newfoundland in 1961 were born there, as opposed to 47 per cent of the people of British Columbia. With comparatively few strangers in their midst there would seem to be stronger tendencies in the five eastern provinces than in the five western provinces to maintain traditional ways of life.

Emigration, by increasing interaction with outsiders, at least indirectly, would tend to counteract the lack of immigration. Table 1-18 suggests that there are many former Maritimers elsewhere in Canada, although comparatively fewer Newfoundlanders. These two sets of data combine to suggest that for Newfoundland, almost as much as for Québec, social interaction is more within the province, less with other provinces, than is the case elsewhere in Canada.[1] The increasing emigration noted in Table 1-16 suggests that the social insularity of Newfoundlanders may be breaking down.

However, one might expect, especially for areas in Newfoundland, that "proportion born in the province" would be related inversely to educational output.

TABLE 1-18

Distribution by Province of Population Born in Province of Residence, 1961 and 1951

Province	% of Province's Population Born There		% of Canadians Born in the Province Still Living There	
	1961	1951	1961	1951
	%	%	%	%
Newfoundland	97	98	89	89
Prince Edward Island	90	92	72	77
Nova Scotia	85	87	80	85
New Brunswick	87	89	79	84
Québec	88	90	95	94
Ontario	69	73	92	92
Manitoba	69	66	72	73
Saskatchewan	72	66	65	67
Alberta	59	56	82	81
British Columbia	47	40	90	91

Source: Derived from Census of Canada, 1961 and 1951.

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[1] Data on emigration to the United States and other countries are required for a more complete picture.

2. DEMOGRAPHIC AND ECONOMIC VARIABLES RELATED TO EDUCATIONAL PRODUCTIVITY

In this section are reported the correlations that were found between some 20 variables regarded as inputs, and seven measures of educational output or productivity. Findings are summarized for each of the Atlantic Provinces, for these provinces taken together, and for Canada.

The Input Variables

Relationships of socioeconomic and demographic variables with educational achievement or productivity have been noted by many investigators. Accordingly, in the present study, a number of promising input variables were selected to see if the expected relationships would hold in the Atlantic Provinces. Scores on each of the 20 input variables, and on the seven output variables, were obtained for each county or census division in the Atlantic Provinces, and for each of the provinces of Canada.

Educational Deprivation

For each county or census division three measures were obtained of the educational deprivation of the area, the measures being calculated from data provided by the 1961 Census:

1) Per cent of the population five years of age and over, not attending school, who have no schooling (illiterate).

2) Per cent of the population five years of age and over, not attending school, who have no schooling or less than grade five (illiterate or functionally illiterate).

3) Per cent of the population with some university education, or with a university degree.

The notion here is that an environment of illiteracy or functional illiteracy will impede a child's educational progress, and, contrariwise, that in an area where there are more university-educated people a child's educational progress will be encouraged. The data are shown in Appendix Table A-7.

Proportion of Children in the Population

Previous studies have suggested negative relationships between size of family or similar variables and educational achievement. Three measures were used in the present study:

1) Children per family.

2) Persons per household.

3) Per cent of the population aged 20-64.

The first two, it was hypothesized, would relate negatively to educational output, the third positively. The data used are contained in Appendix Tables A-1 and A-3.

Proportion of Population Urban

City dwellers generally attain more years of schooling than village residents. Accordingly, educational output was expected to relate negatively to the first measure, positively to the second:

1) Per cent of the population classified as rural non-farm.

2) Per cent of the population in towns of 10,000 or more.

These data are contained in Appendix Table A-2.

Economic Variables

Six measures of the economic level of the county or census division were used, the hypothesis being that educational productivity would be affected by the area's economic level. Five of these correlations were expected to be positive, the sixth negative.

1) Per cent of the male work force in professions.

2) Average male salaries and wages.

3) Per cent male wage earners regularly employed.

4) Male labour force as a per cent of the male population aged 20-64.

5) Female labour force as a per cent of the female population aged 20-64.

6) Per cent male work force in primary industries.

These data are contained in Appendix Tables A-3, A-4 and A-8.

Additional Demographic Variables

Three additional demographic variables were considered worth testing:

1) Per cent of the population born in the province.

2) Per cent of the population who are Roman Catholic.

3) Per cent of the population who speak French only.

The first of these was used on the expectation that in the Atlantic Provinces people who were born in a province and still live there would engender in young people a complacency with their lot, thereby manifesting a negative relationship with educational output.

No hypotheses were established regarding the relationships between educational achievement and Roman Catholicism or French unilingualism. However, it was considered important to see if any relationships existed in the Atlantic Provinces.

The data used are contained in Appendix Tables A-9 and A-10.

Measures of Educational Input

Three measures of educational input were used, one expected to be positively related to educational output and the last two negatively related:

1) Per-pupil expenditure on teachers' salaries.

2) Per cent of all teachers who have two years training or less.

3) Per cent of elementary teachers with two years training or less.

These last three variables were not primarily of interest in themselves. Rather were they used as criteria of the importance of the other 17 variables. It was decided that, to be regarded as significant, the correlation between one of the 17 input variables and one of the output variables would have to be greater than any of the three correlations between the educational input variables and that educational output variable.

The data are contained in Appendix Table A-11.

The Output Variables

Seven measures of educational productivity or output were used. Two dealt with retention, two with completion, and three (negative measures) with pupils over-age in grade (retardation). Data are contained in Appendix Table A-12.

Retention

The two retention measures were devised by Cheal from data supplied by a special analysis carried out by the Education Division of the Dominion Bureau of Statistics:

1) Enrolment in Grade 11, 1965, as per cent of Grade 7, 1961 (adjusted for population change).

2) Enrolment in Grade 12, 1965, as per cent of Grade 8, 1961 (adjusted for population change).

These data could be obtained for New Brunswick, Nova Scotia, and Prince Edward Island. However, since Newfoundland has no Grade 12, it was necessary to use the crude measure "Enrolment in Grade 10, 1965 as per cent of Grade 6, 1961".

When correlations were calculated for the provinces of Canada, two new measures of retention had to be used: [1/]

1) Per cent of age seven boys, 1952-53 reaching Grade 11 by 1964-65.

2) Per cent of age seven girls, 1952-53 reaching Grade 11 by 1964-65.

Completion

The two completion measures were also devised, and in a similar fashion to retention measures, by Cheal:

1) Pupils passing Grade 11, 1965 as per cent of Grade 7, 1961 (adjusted).

2) Pupils passing Grade 12, 1965 as per cent of Grade 8, 1961 (adjusted).

1/ Adapted from Dominion Bureau of Statistics, Student Progress Through the Schools, by Age and Grade 1965, Table 3. For Québec a combined figure was obtained by assuming Protestant enrolment at age seven to be 10.5 per cent of Catholic enrolment.

These data were obtainable for Nova Scotia and New Brunswick, and, on variable 1, for Newfoundland. For Newfoundland there was substituted for variable 2, "Pupils passing Grade 10, 1965 as per cent of Grade 6, 1961". No comparable data were available for Prince Edward Island.

For the provinces of Canada two similar completion measures were devised: 1/

1) Per cent of age seven boys, 1952-53, reaching Grade 12 (presumably having passed Grade 11).

2) Per cent of age seven girls, 1952-53, reaching Grade 12 (presumably having passed Grade 11).

Since these last data were unavailable for Newfoundland, that province was not included in the provinces of Canada completion analysis.

Retardation

Three measures of retardation were used, based on data supplied by Cheal from the special study by the Education Division of the Dominion Bureau of Statistics:

1) Per cent Grade 8 pupils one year or more over-age in grade, 1965.

2) Per cent Grade 7 pupils one year or more over-age in grade, 1965.

3) Per cent Grade 7 boys two years or more over-age in grade, 1965.

These data were available for all correlations.

Summary of Correlation Analysis

The matrixes showing the correlations between each variable and each of the other 26 input and output variables are contained in Appendix Tables A-13 through A-18. The Atlantic Provinces are considered separately and as a Region, and correlations are also examined for Canadian provinces. Highlights of the important findings are summarized below.

New Brunswick

Table 1-19 lists the rank order of input variables which were significantly related to measures of educational out-

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1/ Adapted from Student Progress ..., *loc*. *cit*.

TABLE 1-19

Rank Order of Input Variables Significantly Related to Measures of Educational Output, among New Brunswick Counties

	Rank Order on Measures of						
	Retention		Completion		Retardation		
	(1)	(2)	(1)	(2)	(1)	(2)	(3)
Educational Deprivation							
1. % population illiterate	5½	4	5	4	4	3	3
2. % illiterate or functionally illiterate	5½	5	5	5	3	2	2
3. % with university education	8	6	7	6	8	4	10
Proportion of Children in Population							
1. Children per family	3	3	3	3	5	9	6
2. Persons per household	2	2	5	1	2	6	5
3. % population 20-64	1	1	1	2	7	10	7
Proportion of Population Urban							
1. % rural non-farm	9	8					
2. % in towns of 10,000							
Economic Variables							
1. % male work force in professions	7		8	8			
2. Average male salaries and wages							
3. % male wage earners regularly employed					9	8	9
4. Male labour force as % males 20-64						5	8
5. Female labour force as % females 20-64	4	7	2	7			
6. % male work force in primary industries							
Additional Variables							
1. % population born in province							
2. % Roman Catholic					1	1	1
3. % speaking only French	10				6	7	4
Educational Inputs							
1. Per pupil exp. on teachers' salaries	11	9	9	9	10	11	11
2. % teachers with 2 years training or less							
3. % elementary teachers with 2 years training or less							

Source: Appendix Table A-13.

put among New Brunswick counties. Considering the output measure labelled Retention 1 (enrolment in Grade 11 in 1965 as a per cent of Grade 7 enrolment in 1961) it will be seen that per-pupil expenditures on teachers' salaries ranked 11th. The other two measures of educational input ranked even lower. What is important is that there were 10 input variables more closely related to retention than per-pupil expenditure on teachers' salaries. New Brunswick counties that have lower retention rates are characterized by smaller proportions of population in the age group 20-64 (the highest correlation of .63), by more persons per household, more children per family, where women tend not to form part of the labour force, where there are higher proportions of illiteracy and functional illiteracy, lower proportions of professionals and people with university education. Similar patterns can be seen in Table 1-19 with respect to the other measure of retention and the two measures of completion.

The data presented here suggest that the solutions to problems of retaining pupils to complete their high school education must go beyond raising teachers' salaries and insisting on more training for teachers, must go beyond raising wage rates and expanding secondary industry. Rather do the data suggest that the crux of the problem of low educational productivity in some New Brunswick counties has to do with large families steeped in illiteracy. To confirm this, Appendix Table A-13 displays correlations of .95 and higher between size of family in the county and the degree of illiteracy.

These same input variables underlie retardation, although there is also the suggestion from Table 1-19 that counties with higher proportions of Roman Catholics have relatively more pupils over-age in grade. This relationship is discussed further in the Newfoundland analysis below.

Newfoundland

Table 1-20 highlights the more significant findings for Newfoundland. As in New Brunswick, per-pupil expenditures on teachers' salaries, and proportion of teachers with two years training or less were found to be less highly related to educational output than were many of the demographic variables. Conspicuously, measures of educational deprivation were again found significantly related to retention, completion and retardation. Also, higher outputs were associated with the more urban census divisions,[1/] those having higher proportions of people living in towns exceeding 10,000, fewer in towns of 1,000 or less.

[1/] These data were available for Newfoundland for provincial electoral districts only. Accordingly, formulas had to be devised by which conversions could be made to census divisions.

TABLE 1-20

Rank Order of Input Variables Significantly Related to Measures of Educational Output, among Newfoundland Census Divisions

	Rank Order on Measures of						
	Retention		Completion		Retardation		
	(1)	(2)	(1)	(2)	(1)	(2)	(3)
Educational Deprivation							
1. % population illiterate	1	1	2	1		1	3
2. % illiterate or functionally illiterate	2	5	1	4	10	4	
3. % with university education					5		
Proportion of Children in Population							
1. Children per family					1	5	
2. Persons per household					2	11	
3. % population aged 20-64		7					
Proportion of Population Urban							
1. % rural non-farm	4			6	7	6	
2. % in towns of 10,000	3	6		2		2	
Economic Variables							
1. % male work force in professions				9		8	
2. Average male salaries and wages					3		
3. % male wage earners regularly employed					6		
4. Male labour force as % males 20-64				7	11	9	
5. Female labour force as % females 20-64					4		
6. % male work force in primary industries						10	
Additional Variables							
1. % population born in province		3		8	9		2
2. % Roman Catholic	5	4		3		3	4
3. % speaking only French		2		5	8	7	1
Educational Inputs							
1. Per pupil expenditures on teachers' salaries		8			12		5
2. % teachers with 2 years training or less	6		3	10		12	
3. % elementary teachers with 2 years or less							

Source: Appendix Table A-14.

Contrary to the finding for New Brunswick, higher outputs were associated in Newfoundland with higher proportions of Roman Catholics in the division. That, for Newfoundland census divisions, the correlation between proportion Roman Catholic and proportion in towns of 10,000 or more was .73 suggests that Roman Catholicism is not the basic variable underlying differences in output.

In Newfoundland the crux of the lower productivity in some census divisions seems to be the illiterate and functionally illiterate environments provided by many of the smaller outports.

Nova Scotia

The significant findings for Nova Scotia are shown in Table 1-21. Few of the correlations were significant. For the first measure of output, no correlation exceeded the criterion .60. However, for the second output measure, both "children per family" and "per cent of population aged 20-64" were significant. A similar picture is obtained from an analysis of the measures of completion. Counties with higher proportions of Grade 8's surviving to pass Grade 12 are counties with fewer children per family, higher proportions of the population aged 20-64, and smaller proportions of the work force in primary industries. However all these correlations are small.

Retardation at Grade 8 presents no significant correlation, but both measures of retardation in Grade 7 are related to measures of educational deprivation, to smaller proportions of males and females in the labour force, and to larger proportions of the population born in the province.

Thus, the analysis for Nova Scotia presents no clear picture of the variables underlying differences in the educational output of various counties. There is, however, some suggestion that output is related negatively to size of family, illiteracy, and unemployment.

Prince Edward Island

Prince Edward Island has but three counties. Since correlations based on such a small number of measures are difficult to interpret, discussion has been omitted. The correlations are shown in Appendix Tables A-16 and A-17. Data for Prince Edward Island counties are, however, included in the Atlantic Region analysis which follows.

TABLE 1-21

Rank Order of Input Variables Significantly Related to Measures of Educational Output, among Nova Scotia Counties

	Rank Order on Measures of						
	Retention		Completion		Retardation		
	(1)	(2)	(1)	(2)	(1)	(2)	(3)
Educational Deprivation							
1. % population illiterate						5	3
2. % illiterate or functionally illiterate						3½	4
3. % with university education							
Proportion of Children in Population							
1. Children per family		2		3			
2. Persons per household							
3. % population aged 20-64		2		1			
Proportion of Population Urban							
1. % rural non-farm						2	
2. % in towns of 10,000						6	
Economic Variables							
1. % male work force in professions							
2. Average male salaries and wages							
3. % male wage earners regularly employed							
4. Male labour force as % males 20-64						3½	1
5. Female labour force as % females 20-64						7	2
6. % male work force in primary industries				2			
Additional Variables							
1. % population born in province						1	5
2. % Roman Catholic							
3. % speaking only French							
Educational Variables							
1. Per pupil expenditure on teachers' salaries	1	2	1	4	1	8	6
2. % teachers with 2 years training or less							
3. % elementary teachers with 2 years or less							

Source: Appendix Table A-15.

Atlantic Region

The important variables for all forty-five counties and census divisions of the Atlantic Provinces are identified in Table 1-22. Since comparative scores were not available for Newfoundland, no correlations were computed for Grade 12 retention and completion. Prince Edward Island counties do not form part of the correlation for Grade 11 completion.

For retention to Grade 11, the highest correlation was with measures of educational deprivation, namely with "per cent illiterate" and "per cent functionally illiterate". With a correlation of .64, differences in illiteracy account for some 40 per cent of the variance among counties and census divisions with respect to their retention of pupils from Grade 7 to Grade 11.

However, successful completion of Grade 11 correlates much less highly with the input variables. The highest is a negative correlation coefficient of .45 (about 20 per cent of the variance) with "per cent of male workers in primary industries". "Per cent of male work force in professions" correlates 41.

For differences in retardation rates, correlations are much higher with demographic and economic variables than with the three measures of educational input. Table 1-22 indicates the direct relationships between retardation and educational deprivation, children per family, "non-employment", irregular employment, and residence in communities of less than 1,000 people. Forty-six per cent of the variance (r = .68) between counties and census divisions with respect to retardation in Grade 7 is accounted for by the input variable "male labour force as a per cent of males aged 20-64".

Canada

Among the Provinces of Canada there are many high correlation coefficients between measures of educational output and the input variables used in this study. (See Appendix Table A-19.) Many of these correlations tend to be overlooked in Table 1-23 which identifies only those which exceed the criterion coefficient, in this case "per pupil expenditures on teachers' salaries".

Table 1-23 indicates that associated with low completion rates and low retention rates are provinces with more children per family, more persons per household. The chief finding, however, is that provinces with higher retention and completion rates but lower retardation rates are those with smaller proportions of people born in the province. In fact, the proportion of the variance accounted for by this input variable on the seven measures of output ranges from 54 per cent to 77 per cent. This reflects the finding from the raw data that, generally speaking, in going westward in Canada from province to province, education-

TABLE 1-22

Rank Order of Input Variables Significantly Related to Measures of Educational Output, among Atlantic Provinces Census Divisions and Counties

	Rank Order on Measures of						
	Retention		Completion		Retardation		
	(1)	(2)	(1)	(2)	(1)	(2)	(3)
Educational Deprivation							
1. % population illiterate	1					3½	3
2. % illiterate or functionally illiterate	2				3½	2	2
3. % with university education					3½	5	6
Proportion of Children in Population							
1. Children per family					2	6	4½
2. Persons per household					1	3½	4½
3. % population aged 20-64							
Proportion of Population Urban							
1. % rural non-farm							8
2. % in towns of 10,000							
Economic Variables							
1. % of male work force in professions			2				
2. Average male salaries and wages							
3. % male wage earners regularly employed						8½	9
4. Male labour force as % males 20-64						1	1
5. Female labour force as % females 20-64							
6. % male work force in primary industries			1				
Additional Variables							
1. % population born in province						7	
2. % Roman Catholic							
3. % speaking only French							7
Educational Variables							
1. Per pupil expenditure on teachers' salaries			3		5	8½	10
2. % teachers with 2 years training or less	3						
3. % elementary teachers with 2 years or less							

Source: Appendix Table A-18.

TABLE 1-23

Rank Order of Input Variables Significantly Related to Measures of Educational Output, among the Provinces of Canada

	Rank Order on Measures of						
	Retention		Completion		Retardation		
	(1)	(2)	(1)	(2)	(1)	(2)	(3)
Educational Deprivation							
1. % population illiterate							
2. % illiterate or functionally illiterate							
3. % with university education							
Proportion of Children in Population							
1. Children per family			2½	2			
2. Persons per household		2	1	1			
3. % population aged 20-64							
Proportion of Population Urban							
1. % rural non-farm							
2. % in towns of 10,000							
Economic Variables							
1. % of male work force in professions							
2. Average male salaries and wages							
3. % male wage earners regularly employed							
4. Male labour force as % males 20-64							
5. Female labour force as % females 20-64							
6. % male work force in primary industries							
Additional Variables							
1. % population born in province	1	1	2½	3		1	1
2. % Roman Catholic							
3. % speaking only French							
Educational Variables							
1. Per pupil expenditures on teachers' salaries	2	3	4	4	1	2	2
2. % teachers with 2 years training or less							
3. % elementary teachers with 2 years or less							

Source: Appendix Table A-19.

al output increases and the proportion of provincially-born people decreases.

The question of causal connection between educational output and proportion provincially born should not be dismissed summarily. Conceivably, the children of those who stay at home depend less on the school for socialization and status achievement than the children of migrants. Conceivably also, schools may have more to contribute during environmental change than during stability. As far as the Atlantic Provinces and their subdivisions are concerned, the extent to which lower educational output is a problem depends importantly upon the extent to which life in these areas will probably change and the extent to which people desire it to change.

3. SUMMARY

The foregoing analyses have shown that the educational patterns of retention, completion, and retardation, are linked importantly with the social and economic patterns of the Atlantic Provinces. If retention rates and completion rates are judged to be undesirably low, and retardation rates undesirably high, it would seem that proposals for amelioration must somehow be able to counteract the influences on school children and preschool children of adult illiteracy in the home, in the extended family, and in the community. Also requiring consideration are the questions of family size, non-employment, and residence in small communities. It seems that the educational problems of the Atlantic Provinces are rooted importantly in the culture and the family structure of the region. Those charged with planning educational arrangements of the Atlantic Provinces or in specific counties or census divisions therein, must, therefore, consider the culture, the values, and the social structure of the area. The data here suggest that a program restricted to increasing educational expenditures along traditional lines is apt to be ineffective.

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PART TWO

INTERPROVINCIAL DIFFERENCES IN ELEMENTARY AND SECONDARY EDUCATION

1. INTRODUCTION

Section 93 of the British North America Act contains two basic provisions which have had far-reaching consequences for the development of education in Canada during the past century. It was recognized in 1867 that these provisions were not ideal solutions but necessary compromises in order that Confederation might be accomplished. They have historical roots which go back a century and a half before the union (Cheal, 1963). These two provisions are:

1) The provinces have exclusive legislative authority respecting education.

2) In any province, legal rights to denominational schools which existed at the time of entering the union are protected.

The outgrowth of these provisions has been the evolution of 10 distinctive systems of education in Canada. The following are some of the major consequences of this development:

1) There is no federal office of education in Canada.

2) Federal participation in education has been largely confined to the field of post-secondary education.

3) No central agency except D.B.S. exists, on either a national or regional basis, to collect and disseminate information about education and to promote research and development in areas of general concern.

4) No national policies regarding elementary and secondary education have been developed.

5) A strong department of education exists in each province.

6) Each province has worked out its own pattern of local district organization and responsibility.

7) Each province has evolved its own pupil organization, curriculum, and examinations.

8) Each province has developed its own program and standards of teacher preparation and certification.

9) The denominational provision has differential effects among provinces in regard to the distribution of pupil enrolments and financial support.

While the inputs of the 10 educational systems, and the quality of the interaction among them, are largely determined by factors of a provincial nature, the output in terms of social and economic abilities is of concern beyond the province. The relative contribution which each provincial educational system makes toward meeting national manpower requirements is of particular interest to economic planners. While recognizing the uniqueness of each provincial system its comparison with other provincial systems is perhaps useful and unavoidable.

In this part of the study the major characteristics of the school systems of the Atlantic Provinces are compared with those of the four Western Provinces on both a regional and an interprovincial basis. The purpose of this comparison is to provide some frame of reference within which the inputs and outputs of education in the Atlantic Region may be evaluated. It is not, however, intended that the Western Provinces, either collectively or individually, should serve as models. Major improvements are continually being made in all systems, and all would disclaim having achieved their goals. For several reasons comparisons have not been made with the educational systems in the provinces of Ontario and Québec. Due to the high degree of industrialization and urbanization in these provinces, together with the size of population, comparisons might not be too meaningful. The degree of complexity in the school systems of the two central provinces is another reason for excluding them from the comparisons. In some cases national averages are given, however.

Section 2 is concerned with differences in inputs between and among the provinces of the Atlantic and Western Regions with respect to elementary and secondary education. The pupil input is analysed in terms of education need and education load, and the teacher input in terms of supply and distribution, and qualifications and salaries. Total expenditures on education are reported and their relationship to financial ability is discussed. Sizes of schools and school districts as factors affecting interaction among input variables are given general consideration.

Differences in educational outputs among the provinces of the two regions are the subject of analysis in Section 3. The chief output measure which can be used on an interprovincial basis is pupil retention rate. Some reference is also made to retardation rates as a factor related to pupil retention. Section 4 gives a summary of the findings of this Part of the report.

2. INTERPROVINCIAL DIFFERENCES IN EDUCATION INPUTS

This section examines on an interprovincial and interregional basis four categories of inputs of provincial education systems: pupils, teachers, expenditures and school organization. School organization is not so much an input as a factor determining the distribution and interaction of inputs. Because of this relationship it is reported in this chapter. Pupil input is discussed in terms of education need and education load; teacher input, in terms of distribution and qualifications. Expenditures are analysed on the basis of teacher salaries and operating expenditures. Sizes of schools and school districts are the variables considered under school organization.

Education Need

The term "education need" is used to describe the potential number of students for whom educational opportunities might be provided at each level of the education system. It is distinguished from the number of pupils actually enrolled in the system, which is described by the term "education load".

> "Education needs" is not an unambiguous term. There is no such thing as a "need" for education (either by an individual or a society) except in terms of the values and goals that happen to be held and the total amount of resources available for the pursuit of those goals. A country's "needs" for education, in other words, depend upon the criteria selected and even then can be ascertained only in reference to a host of competing needs. (Parnes, 1962: p. 12.)

The criteria for determining education need for the purposes of this study may be found in the educational goals already outlined. Broadly stated, "education need" in a technologically developed and democratically governed society refers to the formal and informal requirements necessary to fully develop the social and economic abilities of each individual. This, of course, assumes that relatively unlimited resources are available and could be allocated. Operationally defined, "education need" is used in this section of the study to mean the provision of suitable education programs and facilities for all young people from the age of 5 to 19, inclusive. This broad age range would include almost all pupils who enrol in the elementary and secondary schools of the several provincial systems and would also accommodate the age groupings used in census data.

As thus defined, education need is directly related to patterns of population growth and distribution. It is determined by such factors as birth rates, family size, age distribution, immigration, interprovincial migration, and rural-urban trends.

The pattern of population growth for the Atlantic and Western Regions during the period from 1951 to 1966 is given in Table 2-1, and illustrated in Figure 2-1. By 1966 the population of the Atlantic Region had reached almost 2 million, and that of the Western Region 5¼ million. This total for the Atlantic Provinces involved an increase of more than 350,000 during the 15-year period. However, the percentage increase for each of the five-year census periods which it included had been steadily decreasing. The percentage increase for 1961-66 was less than half that for 1951-56. The decline in growth rate was greatest in Nova Scotia where an increase of 8.1 per cent in 1951-56 had been reduced to an increase of 2.6 per cent by 1961-66. The Western Provinces also showed a declining rate of increase for each of the five-year periods.

The distribution of population by age groups is also illustrated in Figure 2-1. The 0-4 age group, which had a small increase from 1951 to 1956, and again from 1956 to 1961, experienced a decrease from 1961 to 1966. The data in Table 2-2 show that there were 11,203 fewer children in the 0-4 age group in the Atlantic Provinces in 1966 than there were in 1961, a decrease of 5 per cent. This age group increased by 4,276 children, or only 0.7 per cent in the Western Provinces. The reduction in this age group in Nova Scotia amounted to 5,718 children or 6 per cent, in New Brunswick to 5,701 children, or 7 per cent. Newfoundland was the only province in the Atlantic Region to have a slight increase in the population of the 0-4 age group.

The population increase of the 5-9 age group in the Atlantic Region was about 6,500, or 3 per cent from 1961 to 1966. It should be noted, however, that five years before, in 1961, there were 250,615 children in the 0-4 age group compared with 243,758 in the same cohort in 1966, a decrease of 7,000. In the Western Region the 5-9 age group increased by 60,000 or 11 per cent during this period, which represented 10,000 children more than the number reported in the 0-4 age group in 1961.

The changing population patterns of the Atlantic Provinces are illustrated in Figures 2-2 and 2-3. The per cent change in population from 1951 to 1961, by single years of age, is shown in Figure 2-2. Also indicated is the per cent change from 1961 to 1966. During the earlier decade the greatest per cent increase occurred in the 9-16 group with the peak at age 12. In 1968 this age cohort would be found already in, or about to enter, institutions of higher and post-secondary education or the labour force. Those pupils who were age 12 in 1961 would be graduating from high school if they had continued to attend and had progressed at a normal rate. It is highly probable, however, that less than half would still be found in school in 1968, and these would be distributed over several high school grades.

The lowest percentage increase during the 1951-1961 decade occurred at the four-year age level. Children in the 4-9 age group in 1961 would be represented in the 9-14 category in

TABLE 2-1

Population Growth, 1951-1966

Province or Region	Population				Per Cent Change				
	1951	1956	1961	1966	51-56	56-61	61-66	51-61	56-66
Newfoundland	361,416	415,074	457,853	493,396	14.8	10.3	7.8	26.7	18.9
Prince Edward Island	98,429	99,285	104,629	108,535	0.9	5.4	3.7	6.3	9.3
Nova Scotia	642,584	694,717	737,007	756,039	8.1	6.1	2.6	14.7	8.8
New Brunswick	515,697	554,616	597,936	616,788	7.5	7.8	3.2	15.9	11.2
Atlantic Region	1,618,126	1,763,692	1,897,425	1,974,758	9.0	7.6	4.1	17.3	12.0
Manitoba	776,541	850,040	921,686	963,066	9.5	8.4	4.5	18.7	13.3
Saskatchewan	831,728	880,665	925,181	955,344	5.9	5.1	3.3	11.2	8.5
Alberta	939,501	1,123,116	1,331,941	1,463,203	19.5	18.6	9.9	41.8	30.3
British Columbia	1,165,210	1,398,464	1,629,082	1,873,674	20.0	16.5	15.0	39.8	34.0
Western Region	3,712,980	4,252,285	4,807,893	5,255,287	14.5	13.1	9.3	29.5	23.6

Source: Derived from Census of Canada, 1961 and 1966.

FIGURE 2-1
ATLANTIC PROVINCES POPULATION GROWTH AND AGE DISTRIBUTION, 1951-1966

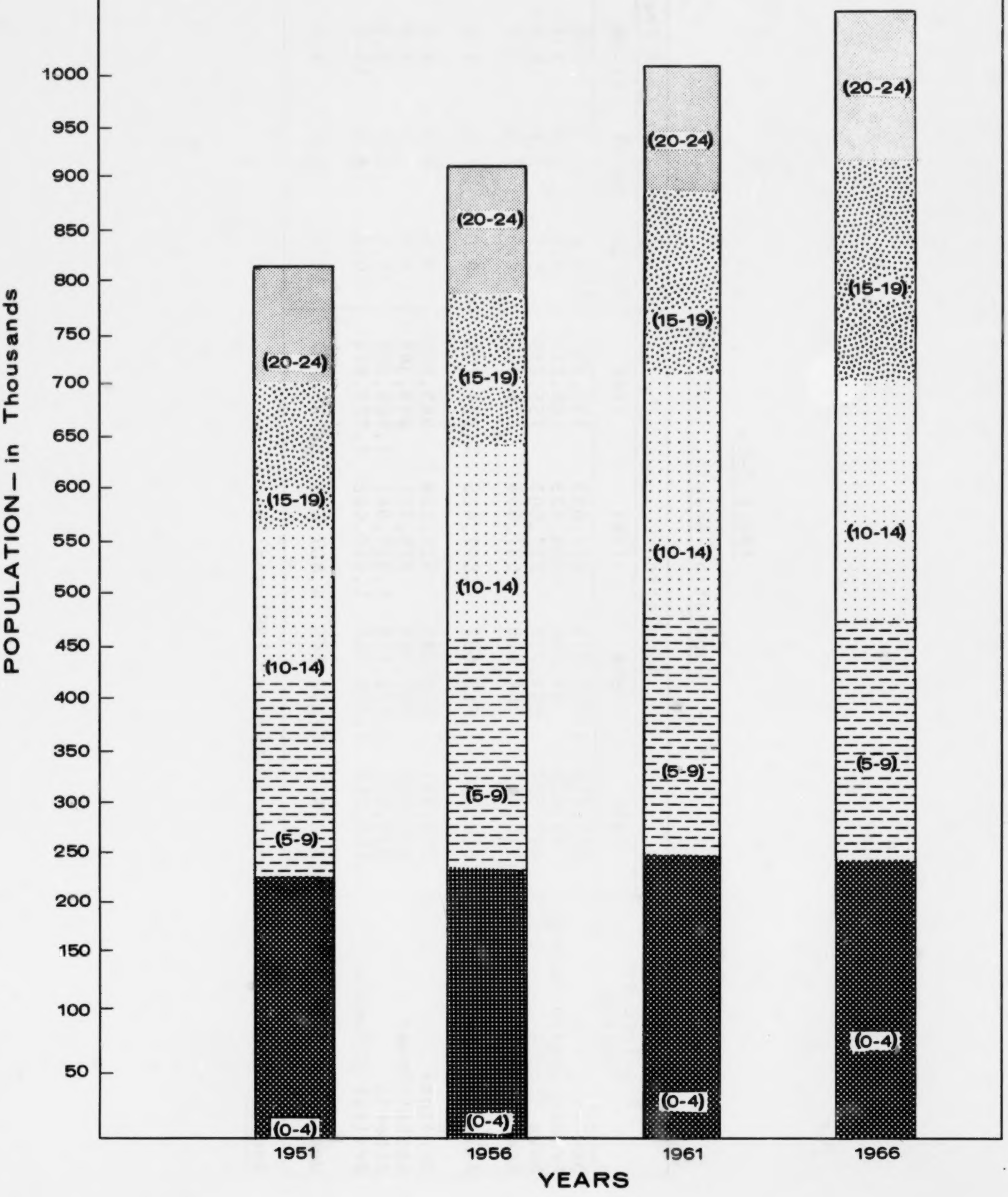


TABLE 2-2

Population Change by Age Groups, 1961-66

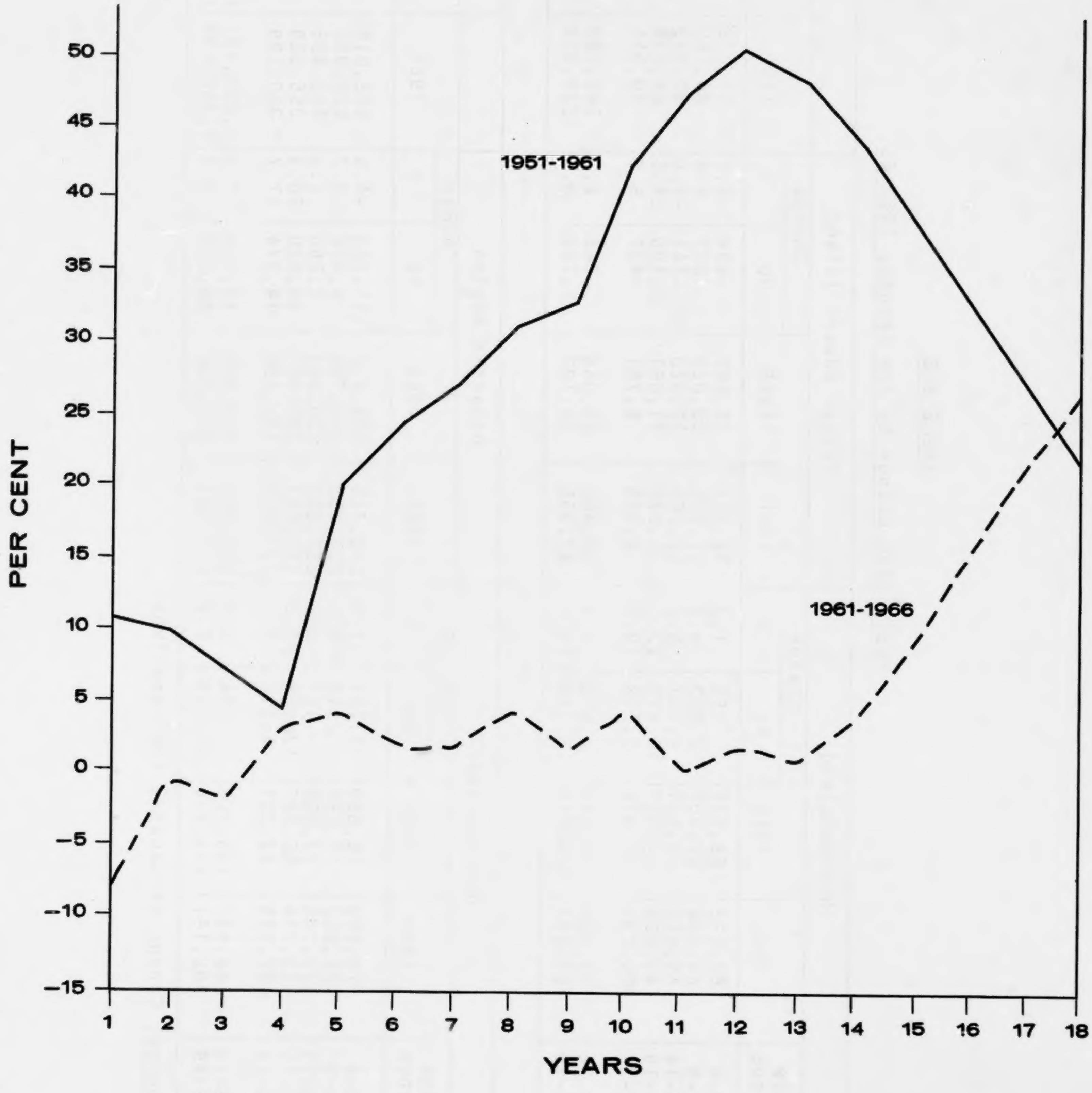
	Newfoundland				Prince Edward Island				Nova Scotia			
			Change				Change				Change	
Age Group	1961	1966	No.	%	1961	1966	No.	%	1961	1966	No.	%
0-4	67,695	68,545	850	1.3	13,221	12,587	-634	-4.8	91,239	85,521	-5,718	-6.3
5-9	64,404	67,007	2,603	4.0	12,216	13,023	807	6.6	84,760	87,433	2,673	3.2
10-14	59,464	63,531	4,067	6.8	12,264	12,023	-241	-2.0	80,329	81,600	1,271	1.6
15-19	43,829	54,307	10,478	23.9	8,875	11,061	2,186	24.6	64,239	74,142	9,903	15.4
20-24	30,238	35,976	5,738	19.0	6,344	6,781	437	6.9	49,311	52,598	3,287	6.7
5-14	123,868	130,538	6,670	5.4	24,480	25,046	566	2.3	165,089	169,033	3,944	2.4
5-19	167,697	184,845	17,148	10.2	33,355	36,107	2,752	8.3	229,328	243,175	13,847	6.0

	New Brunswick				Atlantic Region					Western Region		
			Change				Change				Change	
Age Group	1961	1966	No.	%	1961	1966	No.	%	1961	1966	No.	%
0-4	78,560	72,859	-5,701	-7.3	250,715	239,512	-11,203	-4.5	588,010	592,286	4,276	0.7
5-9	75,882	76,295	413	0.5	237,262	243,758	6,496	2.7	538,982	598,265	59,283	11.0
10-14	72,745	72,908	163	0.2	224,852	230,062	5,260	2.3	466,495	542,613	76,118	16.3
15-19	53,514	65,567	12,053	22.5	170,457	205,077	34,620	20.3	355,329	463,665	108,336	30.5
20-24	37,419	42,331	4,912	1.3	123,312	137,686	14,374	11.7	300,329	360,815	60,486	20.1
5-14	148,627	149,203	576	0.4	462,064	473,820	11,756	2.5	1,005,477	1,140,878	135,401	13.5
5-19	202,141	214,770	12,629	6.2	632-521	678,897	46,376	7.3	1,360,806	1,604,543	243,737	17.9

Source: Census of Canada, 1961 and 1966.

FIGURE 2-2

Atlantic Provinces Per Cent Change in Population by Single Years of Age 1951-1961 and 1961-1966



1966. The graph for the 1961-66 period shows a low point at age 11 and indicates a general levelling off throughout the 10-year span from age 4 to 14. The graph also indicates a further drop of some 15 percentage points for the youngest group, age 1 to 3. This pattern of declining population growth is illustrated for each of the Atlantic Provinces in Figure 2-3.

The implications for education need of this population picture are clear. The postwar peak has now passed through the secondary schools and moved on into the tertiary systems of education or into the labour force. For the next seven or eight years educational need at the secondary level may be expected to remain fairly constant at a point considerably below the peak of the past few years. Following this eight-year period a further decline in level of need may be anticipated. Meanwhile the level of need for elementary education may be expected to fall off sharply within the next few years.

In Table 2-3 will be found the estimated net change in the 5-17 population which may be attributed to migration during the period 1961-64. A slight outmigration is indicated for the Atlantic Region and a small inmigration for the Western Region. The highest rate of outmigration in the Atlantic Region occurred in New Brunswick - 1.7 per cent. Saskatchewan had an outmigration for the 5-17 age group of 2.7 per cent, the highest in the Western Region. In the Atlantic Provinces it would appear that migration contributed only a small proportion of the change in population for the 5-17 age group from 1961 to 1964. Lower birth rates must account for the remainder.

Another form of migration having implications for education need on a subprovincial basis is that from rural to urban areas. Table 2-4 gives the per cent distribution of population between rural and urban areas for each of the provinces in the two regions in the years 1956, 1961 and 1966. In the period from 1961 to 1966 an increase of 12 per cent in the urban population resulted in 53.6 per cent of the total population of the Atlantic Region being classified as urban and 46.4 per cent as rural. In the Western Region, during this period, urban population increased by 17.3 per cent to become 67.2 per cent of the total, leaving the rural population at 32.8 per cent.

In the Atlantic Region, both rural farm and nonfarm populations declined substantially relative to the total population. In 1956 the rural farm population represented 15.5 per cent of the total, in 1966 it was only 6.9 per cent. The nonfarm population had been 35.2 per cent in 1956, increased to 41.6 per cent in 1961 and declined to 39.5 per cent in 1966. From 1961 to 1966, while the urban population of the Atlantic Region increased by 12 per cent, the total population increased by only 4.1 per cent. In Newfoundland the rate of urban growth was double the provincial rate, in Nova Scotia three times, in New Brunswick four times, and in Prince Edward Island nearly five times the provincial rate.

FIGURE 2-3

Per Cent Change in Population by Single Years of Age, by Province, 1961-66

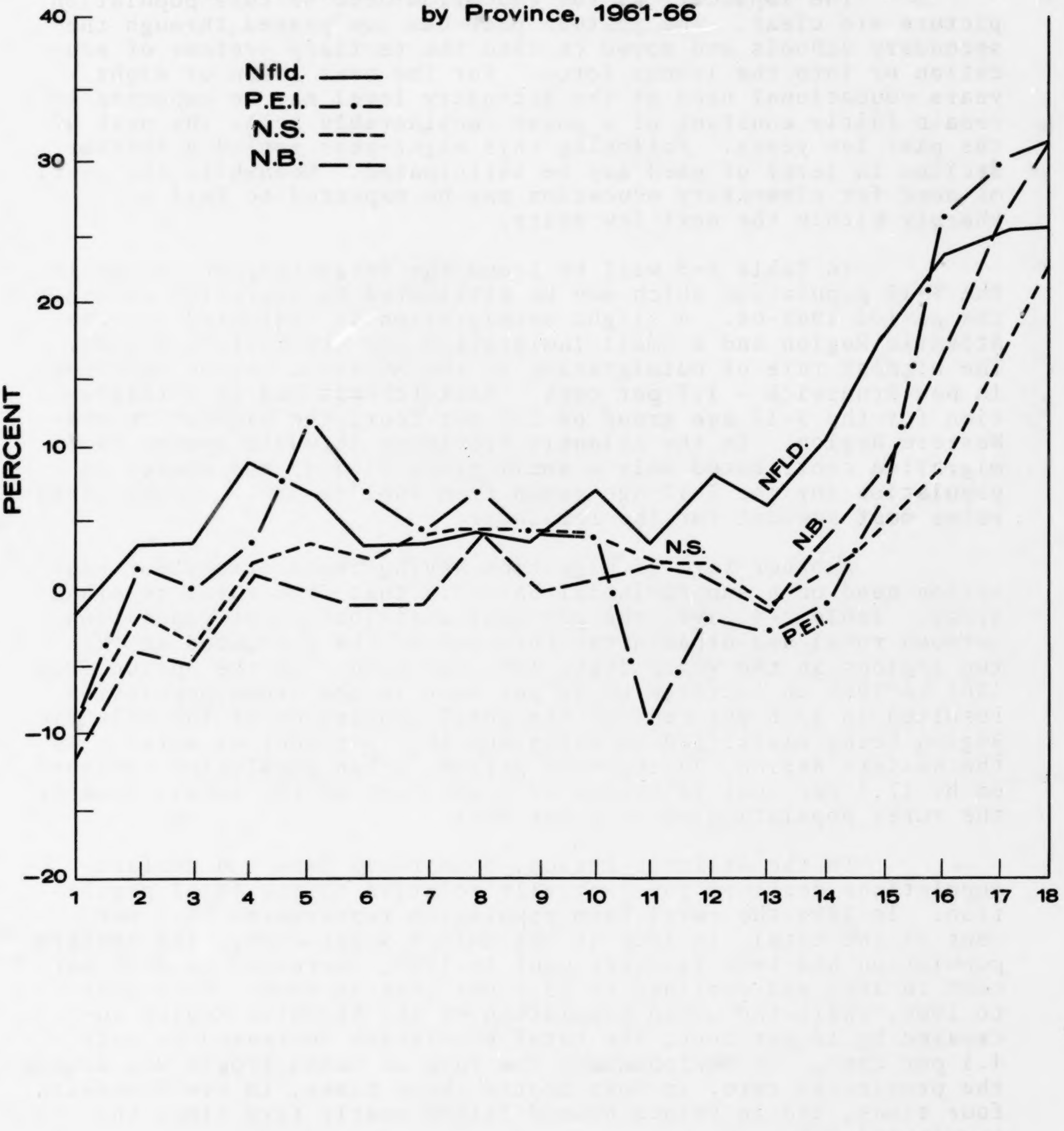


TABLE 2-3

Estimated Net Change in Numbers Due to Migration, Single Years 5-17, 1961-64

Age	Nfld.	P.E.I.	N.S.	N.B.	Atl.	Man.	Sask.	Alta.	B.C.	West.
5	-56	-37	-233	-212	-538	-164	-434	+182	+473	+57
6	-56	-36	-231	-205	-528	-162	-430	+176	+485	+69
7	-56	-38	-236	-204	-534	-157	-435	+166	+485	+59
8	-53	-34	-240	-208	-535	-157	-436	+157	+507	+71
9	-54	-35	-240	-212	-541	-161	-444	+144	+530	+69
10	-69	-35	-270	-237	-611	-162	-496	+149	+551	+42
11	-70	-31	-272	-235	-608	-164	-494	+137	+550	+29
12	-72	-33	-274	-255	-614	-161	-493	+138	+557	+40
13	-75	-31	-272	-233	-611	-164	-494	+136	+560	+38
14	-75	-31	-276	-235	-617	-162	-488	+142	+570	+62
15	-76	-35	-304	-281	-696	-165	-630	+201	+638	+44
16	-78	-36	-309	-293	-720	-169	-635	+204	+677	+77
17	-81	-41	-323	-308	-753	-175	-651	+199	+720	+93
Total	-871	-453	-3,480	-3,110	-7,906	-2,123	-6,560	+2,141	+7,303	+750
% of 1961	-0.6	-1.5	-1.2	-1.7	-1.4	-0.9	-2.7	+0.6	+2.5	+0.01

Source: D.B.S. Student Progress Through the Schools, 1965, p. 10.

TABLE 2-4

Per Cent of Population Rural and Urban, 1956, 1961, 1966

	Nfld.			P.E.I.			N.S.			N.B.			Atl. Reg.		
	'56	'61	'66	'56	'61	'66	'56	'61	'66	'56	'61	'66	'56	'61	'66
Total Rural	55.5	49.3	45.9	69.3	67.6	63.4	42.6	45.7	41.9	54.2	53.5	49.4	50.7	50.2	46.4
Farm	2.4	2.0	1.7	43.4	33.0	28.4	13.7	7.7	5.9	22.5	10.4	8.4	15.5	8.6	6.9
Nonfarm	53.1	47.3	44.2	25.9	34.6	35.0	28.9	38.0	36.0	31.7	43.1	41.0	35.2	41.6	39.5
Total Urban	44.5	50.7	54.1	30.7	32.4	36.6	57.4	54.3	58.1	45.8	46.5	50.6	49.3	49.8	53.6
100,000+	-	-	-	-	-	-	39.2	37.5	38.9	-	-	-	15.5	14.6	14.9
30'-99,999	18.8	18.6	18.8	-	-	-	-	-	-	24.5	22.7	28.5	12.1	11.7	13.6
10'-29,999	5.6	10.5	5.5	16.8	17.5	33.2	3.2	6.7	6.7	5.5	10.3	8.8	5.3	9.3	8.5
Under 10,000	20.1	21.6	29.8	13.9	14.9	3.4	15.0	10.1	12.4	15.8	13.5	13.3	16.4	14.2	16.6

	Man.			Sask.			Alta.			B.C.			West. Reg.		
	'56	'61	'66	'56	'61	'66	'56	'61	'66	'56	'61	'66	'56	'61	'66
Total Rural	39.9	36.1	32.9	63.4	57.0	51.0	43.4	36.7	31.2	26.6	27.4	24.7	41.3	37.4	32.8
Farm	23.8	18.6	16.6	40.1	32.9	29.3	29.1	21.5	19.0	6.8	4.8	4.5	23.2	17.5	15.3
Nonfarm	16.1	17.5	16.3	23.3	24.1	21.7	14.3	15.2	12.2	19.8	22.6	20.2	18.1	19.9	17.5
Total Urban	60.1	63.9	67.1	36.6	43.0	49.0	56.6	62.3	68.8	73.4	72.6	75.3	58.7	62.6	67.2
100,000+	48.1	50.5	51.9	-	12.1	25.9	40.2	45.4	48.6	56.5	53.3	52.7	38.8	42.7	46.6
30'-99,999	-	-	-	18.5	13.9	3.5	-	2.5	2.5	-	-	-	3.8	3.4	1.3
10'-29,999	5.4	5.5	5.5	6.9	5.2	7.3	5.6	3.3	4.3	4.8	9.4	10.7	5.6	6.2	7.3
Under 10,000	6.6	7.9	9.7	11.1	11.8	12.3	10.8	11.1	13.4	12.1	19.9	11.9	10.5	10.3	12.0

Source: Derived from Census of Canada, 1956, 1961 and 1966.

The relative changes in the rural and urban population during the 1956-1966 decade are given on an age-group basis in Table 2-5. For each province and region the percentage change for the decade is given for the working-age group, the total school-age group, and the elementary and secondary groups separately. In the Atlantic Region the total school-age group increased by 22.2 per cent, while the working-age group increased by 7.6 per cent. The percentage increase for the 5-19 group in rural areas was 10.3 per cent while the increase in urban areas was 36.0 per cent. The working-age group had decreased by nearly 2 per cent in the rural areas and increased 15.8 per cent in the urban areas. The high school group had a total increase of 39.3 per cent in the Atlantic Region compared with 16.0 per cent for the elementary-age group. In each case, the urban increase was substantially greater than the rural increase.

Among the Atlantic Provinces Newfoundland had the greatest increase in both school-age groups, with urban centres again showing a much higher rate of growth. The working-age group in this province increased in urban centres at only half the rate of the school-age population. In rural areas there was a decline of 8.5 per cent in the working-age population.

Nova Scotia and New Brunswick had population increases of approximately the same magnitude for the 15-19 age group, and almost the same for the 5-14 age group. The percentage increase in urban population was much greater in New Brunswick than in Nova Scotia for both the school-age population and the working-age population. A 4.7-per-cent increase in the 20-64 working-age population in Nova Scotia had to support an 18.1-per-cent increase in the school-age population. In New Brunswick an increase of 7.6 per cent in the working-age population had to support a 20.6-per-cent increase in the school-age population.

In 1961 the school-age population comprised 32.0 per cent of the total population of the Atlantic Region, 25.9 per cent of the Western Region. In 1966 the school-age population constituted 46.5 per cent of the total population in the Atlantic Region and 41.4 in the Western Region. Indications are that education need will continue to increase at substantial rates in urban centres, even with a decline in birth rates, if the pattern of rural-urban migration continues. In rural areas, on the other hand, education need would be expected to fall off rather sharply as a result of both migration and lower birth rates.

Comparisons have been made of the relationship between the growth of the school-age population and that of the working-age population. Since the latter group must support the former, this relationship must enter into measures of education need. Table 2-6 gives the average number of children per family in each of the provinces for the years 1951, 1956 and 1961. The average continued to rise for each province during the three five-year periods. Statistics for 1966 indicate that a reversal of this trend will have set in. In 1961 the average number of children

TABLE 2-5

Per Cent Change in Population by Age Group, Rural and Urban, 1956-1966

Age Group	Nfld.	P.E.I.	N.S.	N.B.	Atl.	Man.	Sask.	Alta.	B.C.	West.
5-14										
Total	23.7	12.1	13.0	13.9	16.0	24.9	20.5	51.1	54.8	40.3
Rural	3.8	1.3	9.3	3.7	5.3	0.6	-2.8	3.9	43.0	8.9
Urban	50.3	41.3	16.0	28.8	28.8	46.3	71.0	97.2	60.0	68.5
15-19										
Total	52.3	35.1	31.6	39.4	39.3	45.4	29.3	60.3	83.3	56.8
Rural	28.5	25.0	24.2	22.5	24.8	8.1	2.5	8.2	53.9	15.0
Urban	80.7	58.3	37.4	62.8	55.4	78.3	82.8	112.2	96.6	94.8
5-19										
Total	30.9	18.2	18.1	20.6	22.2	30.4	22.9	53.5	62.1	44.7
Rural	9.9	7.4	13.3	8.6	10.3	2.6	-1.4	5.0	45.8	10.6
Urban	58.4	46.2	22.0	38.0	36.0	55.0	74.4	101.1	69.4	75.5
20-64										
Total	13.5	4.4	4.7	7.6	7.6	6.8	2.3	22.3	27.4	16.9
Rural	-8.5	-5.2	3.9	-1.2	-1.6	-12.0	-17.4	-11.7	18.4	-7.0
Urban	39.0	23.7	5.2	16.3	15.8	17.5	33.4	45.6	30.4	31.9

Source: Derived from Census of Canada, 1956 and 1966.

TABLE 2-6

Average Number of Children per Family

Province or Region	1951	1956	1961
Newfoundland	2.37	2.56	2.67
Prince Edward Island	1.99	2.06	2.16
Nova Scotia	1.84	1.90	1.98
New Brunswick	2.09	2.21	2.28
Atlantic	2.04	2.15	2.24
Manitoba	1.53	1.62	1.74
Saskatchewan	1.71	1.75	1.83
Alberta	1.65	1.73	1.85
British Columbia	1.29	1.43	1.59
Western	1.52	1.61	1.74

Source: Census of Canada, 1951, 1956 and 1961.

per family in the Atlantic Region was 2.24 compared with 1.74 for the Western Region. Newfoundland had the highest average, followed by New Brunswick; British Columbia had the lowest. These data indicate that the level of education need would be higher in the Atlantic Provinces than in the Western Provinces, and highest in the provinces of Newfoundland and New Brunswick.

For the purpose of making comparisons of education need among provinces and regions an index of need has been developed and is presented in Table 2-7, column (a). This index takes into consideration the relationship between the school-age population and the supporting working-age population and also recognizes the higher costs of secondary education. It is derived by giving a weighting of 1.6 to the population in the 15-19 age group and expressing the resulting 5-19 population as a ratio of the 20-64 population. The weighting was derived from a consideration of the differences in median salaries of elementary and secondary teachers with some additional adjustment for smaller class size. (*See* Cheal, 1963: p. 73-74.)

In 1965 the need index for the Atlantic Region was found to be .88 compared with a .71 for the Western Region. Newfoundland had the highest index of 1.02, British Columbia the lowest of .65. These indexes would imply that the working-age population of the Atlantic Region would have to make a greater financial effort than that of the Western Region to meet its education need. The effort in Newfoundland would have to be more than 50 per cent greater than that of British Columbia. This factor relates directly to expenditures on education and ability to support education.

Education Load

The number of students enrolled in a school system, and taking advantage of the educational opportunities it offers, constitutes its education load. An index of education load may be derived by expressing the enrolment of young people in the 5-19 age group as a ratio of the working-age group of 20-64. As with the index of need, the enrolment figure for the 15-19 age group was weighted by a 1.6 factor. In Table 2-7, column (b), the index of education load is given for each province of the Atlantic and Western Regions for the year 1965. The index for the Atlantic Region was .66, for the Western Region .52. Newfoundland had the highest load index (.76) and British Columbia the lowest (.49). The provinces ranked in the same order on this index as on the need index.

From 1956 to 1966 the total school enrolment of the Atlantic Region increased by 32.1 per cent, and that of the Western Region by 53.3 per cent. In 1966, 27 per cent of the total population of the Atlantic Provinces was in elementary and secondary schools, compared with 23 per cent in 1956. In the Western Provinces 23 per cent of the total population was in school in

TABLE 2-7

Indexes of Education Need and Load,* 1965

Province or Region	(a) Need Index	(b) Load Index	(c) Enrolment Index	(d) 15-19 In School
Newfoundland	1.02	0.76	0.75	0.46
Prince Edward Island	0.87	0.64	0.74	0.50
Nova Scotia	0.79	0.61	0.78	0.53
New Brunswick	0.90	0.66	0.73	0.51
Atlantic	0.88	0.66	0.75	0.51
Manitoba	0.71	0.51	0.72	0.54
Saskatchewan	0.76	0.57	0.75	0.54
Alberta	0.74	0.55	0.74	0.54
British Columbia	0.65	0.49	0.75	0.66
Western	0.71	0.52	0.74	0.58

* Based upon population estimates.

Need Index:	Population 5-19 as a ratio of population 20-64, with 15-19 weighted 1.6.
Load Index:	School enrolment 5-19 as a ratio of population 20-64, with 15-19 weighted 1.6.
Enrolment Index:	School enrolment 5-19 as a ratio of population 5-19, with 15-19 weighted 1.6.
15-19 in School:	enrolment 15-19 as a ratio of population 15-19.

TABLE 2-8

Public School Enrolments, 1955-56, 1965-66

Province or Region	1955-1956				1965-1966				Per Cent Increase 1956-1966		
	Total	Sec.	Elem.	Sec.	Total	Sec.	Elem.	Sec.	Total	Sec.	Elem.
	no.	no.	no.	%	no.	no.	no.	%	%	%	%
Newfoundland	102,633	12,044	90,589	11.7	145,638	24,874	120,764	17.1	41.9	106.5	33.3
Prince Edward Island	21,499	3,555	17,944	16.5	27,854	6,354	21,500	22.8	29.6	78.7	19.8
Nova Scotia	156,847	23,624	133,223	15.1	199,856	41,664	158,192	20.8	27.4	76.4	18.7
New Brunswick	127,134	17,871	109,263	14.1	165,700	37,200	128,500	22.5	30.3	168.2	17.6
Atlantic Region	408,113	57,094	351,019	14.0	539,048	110,092	428,956	20.4	32.1	92.8	22.2
Manitoba	160,171	27,889	132,282	17.4	222,129	56,673	165,456	25.5	38.7	103.2	25.1
Saskatchewan	181,152	36,530	144,622	20.2	238,320	60,843	177,477	25.5	31.6	66.6	22.7
Alberta	223,949	45,055	178,894	20.1	362,159	92,469	269,690	25.5	61.7	105.2	50.8
British Columbia	241,477	51,991	189,486	21.5	414,376	106,460	307,916	25.7	71.6	104.8	62.5
Western Region	806,749	161,465	645,284	20.0	1,236,984	316,445	920,539	25.6	53.3	96.0	42.7

Source: D.B.S. Preliminary Statistics of Education, 1955-56, 1965-66.

FIGURE 2-4

PER CENT CHANGE IN PUBLIC SCHOOL ENROLMENT 1956-1965 BY GRADES, ATLANTIC AND WESTERN REGIONS

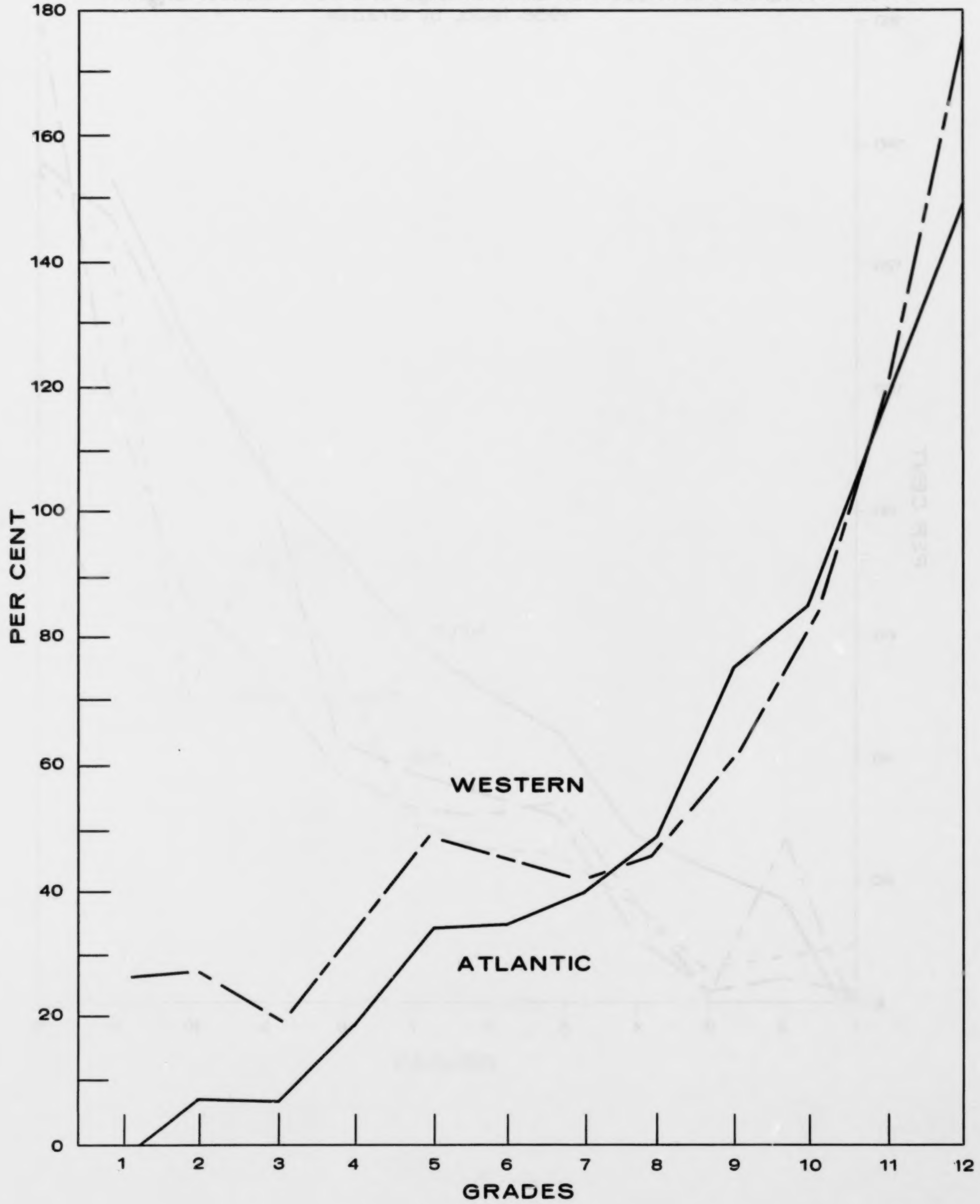


FIGURE 2-5
Atlantic Provinces Per Cent Change in Public School Enrolment, 1956-1965, by Grades

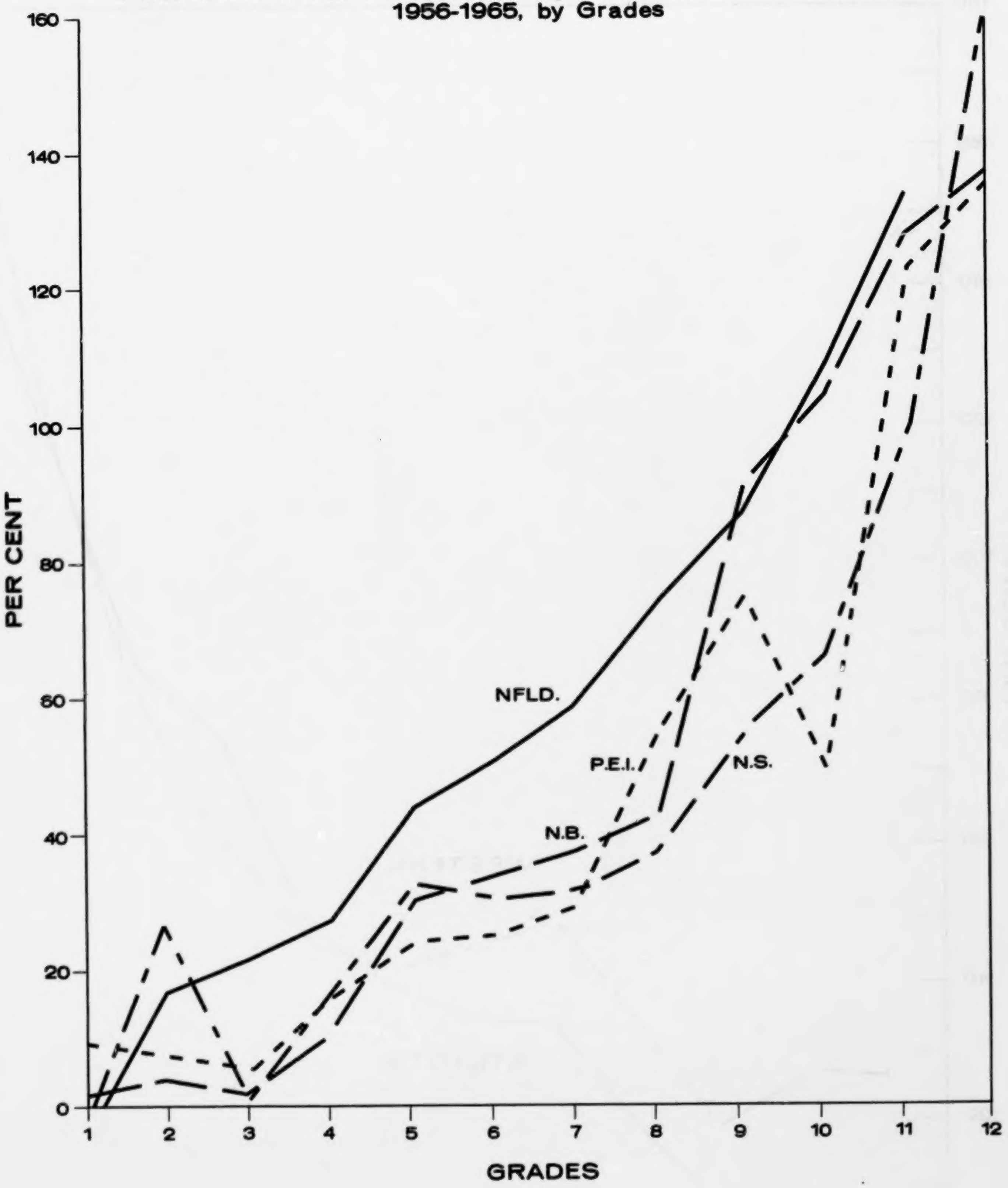
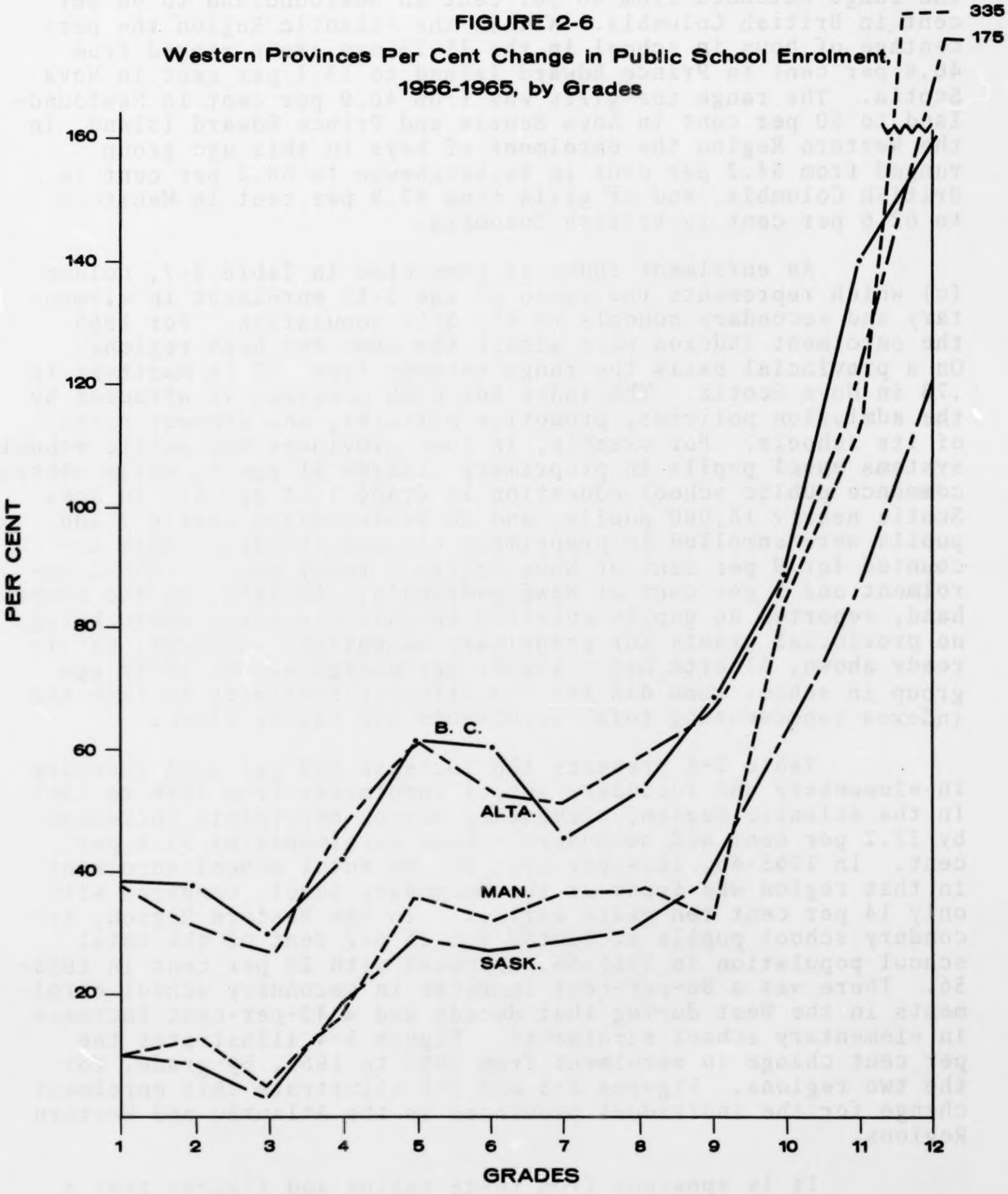


FIGURE 2-6

Western Provinces Per Cent Change in Public School Enrolment, 1956-1965, by Grades



1966, compared with 19 per cent in 1956. An indication of the percentage of the 15-19 population in school is given in Table 2-7, column (d). The Atlantic Region had 51 per cent of that age group in school in 1965, the Western Region 58 per cent. The range extended from 46 per cent in Newfoundland to 66 per cent in British Columbia. Within the Atlantic Region the percentage of boys in school in the 15-19 age group ranged from 46.8 per cent in Prince Edward Island to 53.1 per cent in Nova Scotia. The range for girls was from 40.9 per cent in Newfoundland to 50 per cent in Nova Scotia and Prince Edward Island. In the Western Region the enrolment of boys in this age group ranged from 54.2 per cent in Saskatchewan to 68.2 per cent in British Columbia, and of girls from 47.9 per cent in Manitoba to 62.6 per cent in British Columbia.

An enrolment index is presented in Table 2-7, column (c) which represents the ratio of the 5-19 enrolment in elementary and secondary schools to the 5-19 population. For 1965 the enrolment indexes were almost the same for both regions. On a provincial basis the range extends from .72 in Manitoba to .78 in Nova Scotia. The index for each province is affected by the admission policies, promotion policies, and dropout rates of its schools. For example, in some provinces the public school systems enrol pupils in preprimary classes at age 5, while others commence public school education in Grade 1 at age 6. In Nova Scotia nearly 18,000 pupils, and in Newfoundland nearly 7,500 pupils were enrolled in preprimary classes in 1965. This accounted for 9 per cent of Nova Scotia's total public school enrolment and 5 per cent of Newfoundland's. Alberta, on the other hand, reported no pupils enrolled in this category, there being no provincial grants for preprimary education. However, as already shown, Alberta had a higher percentage of the 15-19 age group in school than did the two Atlantic Provinces so that the indexes representing total enrolments are fairly close.

Table 2-8 presents the increase and per cent increase in elementary and secondary school enrolments from 1956 to 1966. In the Atlantic Region, elementary school enrolments increased by 22.2 per cent and secondary school enrolments by 92.8 per cent. In 1965-66, 20.4 per cent of the total school enrolment in that region was found at the secondary level, compared with only 14 per cent ten years earlier. In the Western Region, secondary school pupils accounted for 26 per cent of the total school population in 1965-66, compared with 20 per cent in 1955-56. There was a 96-per-cent increase in secondary school enrolments in the West during that decade and a 43-per-cent increase in elementary school enrolments. Figure 2-4 illustrates the per cent change in enrolment from 1956 to 1965, by grade, for the two regions. Figures 2-5 and 2-6 illustrate this enrolment change for the individual provinces in the Atlantic and Western Regions.

It is apparent from these tables and figures that a considerable increase in education load occurred in all provinces from 1956 to 1966. This fact is underlined when a weighting of 1.6 is given to the greatly increased enrolments in the secondary school grades. A major part of this increase can be attributed to the post-war population bulge which moved through the secondary school-age group during this decade. Another contributing factor, however, was the increased retention rates of the secondary schools. This factor will be given further consideration in later sections. The levelling off of the secondary school population, which may be anticipated during the next decade, could result in a general reduction in education load for all provinces as a result of the changing ratio between the school-age and working-age population. This trend may be offset, however, by a continued improvement in the holding power of the school which would increase the percentage of the 15-19 age group enrolled.

Teacher Supply and Distribution

From 1961 to 1967 there was an increase of 23 per cent in the number of teachers employed in the Atlantic Provinces compared with an increase of 35 per cent in the Western Provinces. The increase in the Atlantic Region for elementary teachers was 13 per cent, and for secondary teachers 59 per cent. The West experienced an increase of 19 per cent in elementary teachers and 70 per cent in secondary teachers. Table 2-9 presents, for each province, the total number of teachers employed and the per cent increase for each five-year period from 1951 to 1967. Table 2-10 presents, for elementary and secondary teachers separately, the increase from 1961 to 1967 by province and region.

The distribution of teachers in each province by sex and school level is given for 1966-67 in Table 2-11. Twenty per cent of the teachers in the Atlantic Provinces were in secondary schools, compared with 30 per cent in the Western Provinces. Both regions had about 10 per cent of their teachers in combined elementary-secondary schools. In Prince Edward Island 72 per cent of the teachers were in elementary schools compared with 57 per cent in British Columbia.

Male teachers constituted 27 per cent of the teaching force in the Atlantic Region and 39 per cent of the teaching force in the Western Region in 1966-67. British Columbia had the highest percentage of male teachers - 44 per cent, Prince Edward Island the lowest - 21 per cent. At the elementary level only 14 per cent of the teachers were male in the Atlantic Provinces compared with 22 per cent in the West. Fifty-six per cent of the secondary teachers in the Atlantic Provinces were male compared with 67 per cent in the Western Provinces. Among the Atlantic Provinces Newfoundland employed the largest percentage of male teachers at all levels of schooling.

In Appendix B, Tables B-1 and B-2 present a distribution of teachers by sex, school level, and community size, for

TABLE 2-9

Increase in All Teachers Employed, 1951-1967

Province or Region	Number Employed				Per Cent Increase			
	1950-51	1955-56	1960-61	1966-67*	1951-56	1956-61	1961-67	1951-67
Newfoundland	2,499	3,106	4,317	5,644	24.3	39.0	30.7	125.9
Prince Edward Island	719	822	969	1,318	14.3	17.9	36.0	83.3
Nova Scotia	4,436	5,586	6,664	8,033	25.9	19.3	20.5	81.1
New Brunswick	3,907	4,636	5,866	6,927	18.7	26.5	18.1	77.3
Atlantic	11,561	14,150	17,816	21,922	22.4	25.9	23.0	89.6
Manitoba	4,990	6,080	7,460	9,432	21.8	22.7	26.4	89.0
Saskatchewan	7,218	7,624	8,638	10,923	5.6	13.3	26.5	51.3
Alberta	6,788	8,391	11,762	16,358	23.6	40.2	39.1	141.0
British Columbia	6,272	8,539	11,868	16,966	36.1	39.0	43.0	170.5
Western	25,268	30,634	39,728	53,679	21.2	29.7	35.1	124.3

* Derived from unpublished D.B.S. data.

Source: D.B.S. Salaries and Qualifications of Teachers, 1950-51, 1955-56, 1960-61.

TABLE 2-10

Increase in Elementary and Secondary Teachers Employed, 1961-67

Province or Region	Elementary				Secondary			
			Increase				Increase	
	1961	1967	No.	%	1961	1967	No.	%
Newfoundland	3,543	4,353	810	22.9	774	1,291	517	66.8
Prince Edward Island	812	953	141	17.4	157	365	208	132.5
Nova Scotia	5,013	5,476	463	9.2	1,651	2,557	906	54.9
New Brunswick	4,359*	4,658	299	6.9	1,507*	2,269	762	50.6
Atlantic	13,727	15,440	1,713	12.5	4,089	6,482	2,393	58.5
Manitoba	5,450*	6,092	642	11.8	2,010*	3,340	1,330	66.2
Saskatchewan	6,624	7,192	568	8.6	2,014	3,731	1,717	85.3
Alberta	7,849	9,459	1,610	20.5	3,913	6,899	2,986	76.3
British Columbia	7,367	9,762	2,395	32.5	4,501	7,204	2,703	60.1
Western	27,290	32,505	5,215	19.1	12,438	21,174	8,736	70.2

* D.B.S. Estimates for New Brunswick and Manitoba include teachers not reporting that year.

Source: Derived from D.B.S. Salaries and Qualifications of Teachers in Public Elementary and Secondary Schools, 1960-61; D.B.S. Education Division for 1966-67 data.

TABLE 2-11

Distribution of Male and Female Teachers by Teaching Level, 1966-67

Province or Region		All Schools			Elementary			Combined El.-Sec.			Secondary		
		M	F	T	M	F	T	M	F	T	M	F	T
Nfld.	(no.)	1,986	3,658	5,644	936	3,165	4,101	458	194	652	592	299	891
	(%)	35.2	64.8	100.0	22.8	77.2	72.7	70.2	29.8	11.5	66.4	33.6	15.8
P.E.I.	(no.)	272	1,046	1,318	89	861	950	17	20	37	166	165	331
	(%)	20.6	79.4	100.0	9.4	90.6	72.1	45.9	54.1	2.8	50.2	49.8	25.1
N.S.	(no.)	1,926	6,107	8,033	582	4,876	5,458	567	531	1,098	777	700	1,477
	(%)	24.0	76.0	100.0	10.7	89.3	67.9	51.6	48.4	13.7	52.6	47.4	18.4
N.B.	(no.)	1,741	5,186	6,927	480	4,160	4,640	405	336	741	856	690	1,546
	(%)	25.1	74.9	100.0	10.3	89.7	67.0	54.7	45.3	10.7	55.4	44.6	22.3
Atlantic	(no.)	5,925	15,997	21,922	2,087	13,062	15,149	1,447	1,081	2,528	2,391	1,854	4,245
	(%)	27.0	73.0	100.0	13.8	86.2	69.1	57.2	42.8	11.5	56.3	43.7	19.4
Man.	(no.)	3,408	6,024	9,432	1,346	4,733	6,079	427	338	765	1,635	953	2,588
	(%)	36.1	63.9	100.0	22.1	77.9	64.5	55.8	44.2	8.1	63.2	36.8	27.4
Sask.	(no.)	4,088	6,835	10,923	1,560	5,596	7,156	572	354	926	1,956	885	2,841
	(%)	37.4	62.6	100.0	21.8	78.2	65.5	61.8	38.2	8.5	68.8	31.2	26.0
Alta.	(no.)	6,115	10,243	16,358	1,718	7,653	9,371	1,894	1,339	3,233	2,503	1,251	3,754
	(%)	37.4	62.6	100.0	18.3	81.7	57.3	58.6	41.4	19.8	66.7	33.3	22.9
B.C.	(no.)	7,447	9,519	16,966	2,604	7,116	9,720	255	157	412	4,588	2,246	6,834
	(%)	43.9	56.1	100.0	26.8	73.2	57.3	61.9	38.1	2.4	67.1	32.9	40.3
Western	(no.)	21,060	32,621	53,681	7,228	25,098	32,326	3,148	2,188	5,336	10,682	5,355	16,037
	(%)	39.2	60.8	100.0	22.4	77.6	60.2	59.0	41.0	9.9	66.6	33.4	29.9

Source: Derived from D.B.S. unpublished data.

each of the Atlantic Provinces. In 1966-67 45 per cent of all teachers were to be found in rural schools and 28 per cent in urban centres of 10,000 or more population. A somewhat lower percentage of the male teachers than of the female teachers was found in the rural areas in all Atlantic Provinces except Newfoundland.

During the three-year period 1964-67 the average retention rate of teachers in the Atlantic Provinces was 83 per cent compared with 86 per cent in the Western Provinces. During that period, however, the retention rate for the Atlantic Provinces fell from 85.0 per cent in 1964-65 to 80.7 per cent in 1966-67. In the Western Provinces the rate declined from 86.6 per cent to 84.4 per cent. The Western Provinces retained about 5 per cent more of their teachers in the same school district than did the Atlantic Provinces. British Columbia and Nova Scotia had an average retention rate in the same district of about 80 per cent from 1964-67, but Newfoundland had an average of only 57 per cent.

A picture of the retention, losses, and recruitment of teachers in 1966-67, as derived from D.B.S. data, is produced in Table 2-12 for the Atlantic Provinces and in Table 2-13 for the Western Provinces. From these tables it would appear that the teacher retention rate for the Atlantic Region as a whole was some 2 per cent below that of the Western Region in that year. British Columbia had the highest teacher retention rate of 87.5 per cent, followed by Nova Scotia with 86.3 per cent. Newfoundland had the lowest retention rate of 73.4 per cent, and also the lowest rate of retention in the same district, 56.8 per cent. However, a larger percentage of the losses in Newfoundland were attributed to teachers returning for further training than was the case in the other provinces. This factor may be accounted for by training and certification policies which permit minimal preservice preparation.

In 1966-67, the transfer of teachers to other occupations accounted for a 7.4 per cent loss in the teaching force in Newfoundland, compared with a 0.9 per cent loss in Alberta. From 1964-67 the percentage of teachers lost for this reason increased in Newfoundland, Nova Scotia and Manitoba, but declined in Prince Edward Island and Alberta. Marriage and housekeeping accounted for about 5 per cent of the losses in the teacher force of both Atlantic and Western Regions during the three-year period. The percentage of teacher losses through transfer to teaching positions in other provinces was about 3.5 per cent in Nova Scotia, Manitoba and Alberta in 1966-67. For the provinces reported, the losses through transfers to other provinces would appear to be increasing, suggesting a trend toward greater teacher mobility.

In the Atlantic Region 62.8 per cent of the new teachers in 1966-67 were supplied by training institutions, compared with 57.4 per cent in the Western Region. In Newfoundland al-

TABLE 2-12

Teacher Supply, 1966-67, Atlantic Provinces

	Nfld.		P.E.I.		N.S.		N.B.		Atl. Region	
	no.	%	no.	%	no.	%	no.	%	no.	%
Staff 1965-66	5,545		1,209		7,897		6,812		21,463	
Retention										
District	3,151	56.8	884	73.1	6,220	78.8	4,782	70.2	15,037	70.1
Elsewhere	923	16.6	184	15.2	592	7.5	992	14.6	2,691	12.5
Total Retention	4,074	73.4*	1,068	88.3*	6,812	86.3*	5,774	84.8*	17,728	82.6*
Losses										
Training		10.6		2.9		1.9		n.a.		
Other occupations		7.4		1.2		1.9		n.a.		
Housekeeping		5.8		4.5		4.5		n.a.		
Admin. positions in Ed.		n.a.		n.a		0.4		n.a.		
Teaching elsewhere		1.9		2.2		3.4		n.a.		
Other		0.8		0.8		1.5		n.a.		
Total Losses	1,471	26.5*	141	11.7*	1,085	13.7*	1,038	15.2*	3,735	17.4*
Recruitment										
Colleges	455	29.0	45	18.0	118	9.7	207	18.0	825	19.7
Other training	641	40.8	73	29.2	586	48.0	506	43.9	1,806	43.1
Other occupations	417	26.6	94	37.6	335	27.4	320	27.7	1,166	27.8
Teachers from other provinces	57	3.6	38	15.2	182	14.9	120	10.4	397	9.4
Total Recruitment	1,570	27.6‡	250	19.0‡	1,221	15.2‡	1,153	16.6‡	4,194	19.1‡
Staff 1966-67	5,644		1,318		8,033		6,927		21,922	
Staff Increase 1965-66 - 1966-67	99	1.8	109	9.0	136	1.7	115	1.7	459	2.1

* Per cent of 1965-66.

‡ Per cent of 1966-67.

n.a. - not available.

Source: Derived from D.B.S. unpublished data.

TABLE 2-13

Teacher Supply. 1966-67, Western Provinces

	Man.		Sask.		Alta.		B.C.		West. Region	
	no.	%	no.	%	no.	%	no.	%	no.	%
Staff 1965-66	9,232		10,500		15,518		15,759		51,009	
Retention										
District	6,519	70.6	7,525	71.7	11,996	77.3	12,413	78.8	38,453	75.4
Elsewhere	1,082	11.7	980	9.3	1,162	7.5	1,380	8.7	4,604	9.0
Total Retention	7,601	82.3*	8,505	81.0*	13,158	84.8*	13,793	87.5*	43,057	84.4*
Losses										
Training		3.9		n.a.		4.3		n.a.		
Other occupations		3.5		n.a.		0.9		n.a.		
Housekeeping		5.2		n.a.		4.7		n.a.		
Admin. positions in Ed.		0.7		n.a.		0.9		n.a.		
Teaching elsewhere		3.5		n.a.		3.3		n.a.		
Other		0.9		n.a.		1.1		n.a.		
Total Losses	1,631	17.7	1,995	19.0	2,360	15.2	1,966	12.5	7,952	15.6
Recruitment										
Colleges	372	20.3	235	9.7	525	16.4	181	5.7	1,313	12.4
Other training	815	44.5	1,230	50.9	1,296	40.5	1,441	45.4	4,782	45.0
Other occupations	424	23.2	538	22.2	713	22.3	651	20.5	2,326	21.9
Teachers from other provinces	220	12.0	415	17.2	666	20.8	900	28.4	2,201	20.7
Total Recruitment	1,831	19.4‡	2,418	22.1‡	3,200	19.6‡	3,173	18.7‡	10,622	19.8‡
Staff 1966-67	9,432		10,923		16,358		16,966		53,679	
Staff Increase 1965-66 - 1966-67	200	2.2	423	4.0	840	5.4	1,207	7.7	2,670	5.2

* Per cent of 1965-66.

‡ Per cent of 1966-67.

n.a. - not available.

Source: Derived from D.B.S. unpublished data.

most 70 per cent of the new teachers came from training institutions, whereas in Prince Edward Island only 47.6 per cent were supplied from this source. In British Columbia the percentage of recruits from training institutions was 51.1 per cent, the lowest in the Western Region.

The Western Provinces recruited a much higher percentage of their teachers from outside the province than did the Atlantic Provinces. During one period, 1964-67, the Atlantic Region received about 9 per cent of its new teachers from other provinces, whereas the Western Region recruited 15 per cent of its new teachers in this manner in 1964-65 and 21 per cent in 1966-67. In British Columbia the percentage of new teachers supplied from outside the province had increased from 20 per cent in 1964-65 to 28 per cent in 1966-67. In Newfoundland the supply from outside sources was 2.2 per cent in 1964-65 and 3.6 per cent in 1966-67.

Transfers from other occupations provided 27.8 per cent of the new teachers in the Atlantic Region in 1966-67, compared with 21.9 per cent in the Western Region. Prince Edward Island received 37.3 per cent of its new teachers from this source. Many would undoubtedly be housewives.

Teacher Qualifications

Two major variables determine those teacher qualifications which can be measured in an objective manner, though it is recognized that many subjective criteria may also enter into teacher effectiveness. These two variables are training and experience. There are, of course, both quantitative and qualitative dimensions to both of these variables but this study will limit itself to those quantitative measures which can be reported objectively.

Two aspects of teacher experience considered, aspects which may influence a teacher's effectiveness in a school district, are tenure and total experience. Tenure is a term used in D.B.S. reports, and in this study, to refer to length of teaching experience in a particular school district, as opposed to total experience, which would also include that gained in other districts. There is a basic assumption that, up to a point at least, a teacher's effectiveness improves with experience and that some continuity with the same school district is necessary to make the maximum contribution to its educational programs.

Considering Canada as a whole, there was a general increase in the median tenure of elementary teachers between 1961 and 1967, as indicated in Table 2-14. The median tenure of secondary teachers showed a decrease during that period in four of the provinces and remained about the same in two others. This trend could be related to the expansion of secondary school

TABLE 2-14

A. Median Tenure,*
Male and Female Elementary Teachers and Principals

Province	1960-61			1966-67‡			Change '61-67		
	M	F	T	M	F	T	M	F	T
Newfoundland	0:0	1:4	1:2	1:2	1:7	1:6	1:2	0:3	0:4
Prince Edward Island	1:4	2:0	1:9	2:4	2:2	2:2	1:0	0:2	0:3
Nova Scotia	2:5	4:4	4:2	2:8	5:6	5:2	0:3	1:2	1:0
New Brunswick	1:3	2:7	2:5	1:5	4:1	3:7	0:2	1:4	2:2
Manitoba	1:6	2:4	2:1	2:2	2:3	2:3	0:6	-0:1	0:2
Saskatchewan	1:9	2:4	2:2	2:6	2:8	2:7	0:7	0:4	0:5
Alberta	2:9	3:1	3:1	3:3	4:0	3:8	0:4	0:9	0:7
British Columbia	3:2	3:0	3:0	3:9	2:7	2:9	0:7	0:3	-0:1

B. Median Tenure,*
Male and Female Secondary Teachers and Principals

Province	1960-61			1966-67‡			Change '61-67		
	M	F	T	M	F	T	M	F	T
Newfoundland	2:2	2:3	2:2	2:0	2:6	2:2	-0:2	0:3	0:0
Prince Edward Island	2:8	2:5	2:7	1:9	2:7	2:2	-0:9	0:2	-0:5
Nova Scotia	3:7	3:8	3:8	3:0	4:1	3:5	-0:7	0:3	-0:3
New Brunswick	2:7	4:0	3:1	2:9	3:7	3:2	0:2	-0:3	0:1
Manitoba	2:2	3:3	2:6	3:0	2:7	2:9	0:8	-0:6	0:3
Saskatchewan	3:5	2:7	3:2	3:0	2:8	2:9	-0:5	0:1	0:7
Alberta	3:9	3:7	3:8	3:1	3:3	3:2	-0:8	-0:4	-0:6
British Columbia	4:8	4:0	4:6	4:3	3:4	4:0	-0:5	-0:6	-0:6

* In years : months.

‡ Derived from D.B.S. unpublished data.

Source: D.B.S. Salaries and Qualifications, 1960-61.

enrolments during that period which consequently required an increase in the number of new teachers employed. Nova Scotia and New Brunswick had the greatest increases in median tenure of elementary teachers while the greatest decline in tenure of secondary teachers occurred in Alberta and British Columbia. Of the eight provinces reported, Nova Scotia had the highest median tenure for elementary teachers (5 years, 2 months) and British Columbia had the highest for secondary teachers (4 years, 0 months).

The tenure of female elementary teachers is shown to be significantly higher than that for male elementary teachers in all Atlantic Provinces except Prince Edward Island, which had a median for males of 2:4 [1] and for females of 2:2. Nova Scotia had the very high median tenure for female elementary teachers of 5:6 and for female secondary teachers of 4:1, the highest of all eight provinces. British Columbia had the highest rate of tenure for male teachers - 3:9 for elementary teachers and 4:3 for secondary. The median tenure for male elementary teachers in Newfoundland in 1966-67 was only 1:2.

In terms of median years of total experience for all teachers, all of the Atlantic Provinces, except Newfoundland, would exceed the national average in 1967. However, the median experience of both elementary and secondary male teachers in the Atlantic Provinces was considerably below that of male teachers in the Western Provinces, and considerably below that of female teachers in both regions. In Table 2-15 will be found the median years of experience of elementary and secondary teachers, male and female, for 1960-61 and 1966-67. With a median of 10:9 Nova Scotia had the most experienced elementary teachers of all eight provinces. Alberta, with a median of 9:0 was the next highest. The differential between male and female elementary teachers on this variable was most pronounced, however, in Nova Scotia. The median experience for males was 5:8 and for females 11:7. In Alberta the median for males was 7:3 and for females 9:4. At the secondary level the median experience for male teachers in Nova Scotia was 7:1 and for females 11:5. These medians represented the highest in the Atlantic Provinces. The median experience of both male and female elementary teachers in Newfoundland was the lowest of all eight provinces, being 3:0 for males and 4:0 for females. Prince Edward Island had the lowest median level of experience for male secondary teachers.

The other major variable associated with teacher qualifications is level of training. Tables 2-16 and 2-17 compare levels of training in terms of certificate level, or years of

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[1] i.e., 2 years and 4 months.

TABLE 2-15

A. Median Years Experience,*
Male and Female Elementary Teachers and Principals

Province	1960-61			1966-67‡			Change '61-67		
	M	F	T	M	F	T	M	F	T
Newfoundland	2:1	3:4	2:9	3:0	4:0	3:8	0:9	0:6	0:9
Prince Edward Island	4:2	6:9	6:8	6:8	8:9	8:7	2:6	2:0	1:9
Nova Scotia	5:7	10:1	9:7	5:8	11:7	10:9	0:1	1:6	1:2
New Brunswick	3:2	8:0	7:3	3:4	9:3	8:5	0:2	1:3	1:2
Manitoba	5:1	7:5	6:9	5:8	6:2	6:1	0:7	-1:3	-0:8
Saskatchewan	6:4	8:2	7:9	5:4	6:6	6:3	-1:0	-1:6	-1:6
Alberta	8:0	9:1	8:9	7:3	9:4	9:0	-0:7	0:3	0:1
British Columbia	6:6	7:6	7:3	7:5	6:7	6:9	0:9	-0:9	-0:4

B. Median Years Experience,*
Male and Female Secondary Teachers and Principals

Province	1960-61			1966-67‡			Change '61-67		
	M	F	T	M	F	T	M	F	T
Newfoundland	8:9	12:3	9:8	6:5	8:9	7:0	-2:4	-3:4	-2:8
Prince Edward Island	6:9	13:8	12:1	4:5	8:9	6:1	-2:4	-4:9	-6:0
Nova Scotia	8:7	12:1	10:2	7:1	11:5	8:6	-1:6	-0:6	-1:6
New Brunswick	6:6	11:0	8:5	5:9	9:0	7:1	-0:7	-2:0	-1:4
Manitoba	8:9	10:8	9:4	7:4	7:1	7:3	-1:5	-3:7	-2:1
Saskatchewan	12:2	12:5	12:2	9:5	10:1	9:7	-2:7	-2:4	-2:5
Alberta	11:4	12:0	11:6	7:1	9:1	7:7	-4:3	-2:9	-3:9
British Columbia	10:0	10:9	10:2	9:4	8:9	9:2	-0:6	-2:0	-1:0

* In years : months.

‡ Derived from D.B.S. unpublished data.

Source: D.B.S. Salaries and Qualifications, 1960-61.

TABLE 2-16

Qualifications by Certificate Level* of Teachers and Principals, 1960-61 and 1966-67

1960-61	Elementary					Secondary				
	0-1	1	2	3-4	5+	0-1	1	2	3-4	5+
	%	%	%	%	%	%	%	%	%	%
Nfld.	54.5	31.3	8.2	6.0	0.0	22.9	21.7	17.4	52.6	0.0
P.E.I.	42.1	47.5	6.5	2.7	1.1	5.7	38.2	18.5	17.8	19.7
N.S.	12.8	24.4	41.8	10.0	11.0	3.0	3.5	15.1	17.7	58.3
N.B.	19.1	54.1	17.9	4.8	4.2	4.0	25.5	18.6	10.8	40.3
Atlantic	27.3	36.3	23.4	6.9	5.4	4.4	16.3	17.0	22.1	39.1
Man.	2.2	20.2	69.7	1.0	6.7	9.9	1.7	28.6	7.4	46.6
Sask.	1.1	2.7	57.5	33.8	4.3	1.4	0.7	9.1	29.9	57.2
Alta.	8.4	6.7	52.9	31.9	0.0	3.3	0.7	19.2	76.7	0.0
B.C.	1.4	11.2	52.0	21.2	14.2	2.8	1.6	9.0	13.5	73.2
Western	3.6	9.4	56.8	23.7	6.4	3.9	1.2	15.2	33.9	44.6
1966-67‡										
Nfld.	35.6	42.2	11.2	8.8	2.2	2.9	17.8	17.1	36.1	26.1
P.E.I.	23.5	46.2	21.9	5.5	2.9	7.1	12.6	15.9	23.3	41.1
N.S.	9.5	15.3	35.5	24.0	15.7	3.8	1.5	8.1	24.0	62.6
N.B.	15.9	28.0	42.5	11.5	2.1	2.5	9.4	28.4	34.6	25.1
Atlantic	19.7	28.6	30.0	14.8	7.0	3.3	8.1	17.4	30.1	41.0
Man.	4.0	14.4	73.3	0.0	8.3	11.0	2.1	22.4	0.0	64.5
Sask.	2.6	1.0	29.9	57.4	9.1	2.6	0.1	4.2	27.3	65.8
Alta.	6.7	3.4	36.2	53.7	0.0	3.9	0.3	9.4	86.4	0.0
B.C.	1.5	3.5	39.4	42.4	13.2	2.5	0.5	6.0	17.8	73.2
Western	3.7	5.0	42.7	41.1	7.5	4.2	0.6	9.2	39.5	46.4

* Years of training beyond junior matriculation.
‡ Derived from D.B.S. unpublished data.

Source: D.B.S. Salaries and Qualifications, 1960-61.

TABLE 2-17

Percentage Point Change in Teachers' Qualifications by Certificate Level, 1960-61 to 1966-67

Province or Region	Elementary					Secondary				
	0-1	1	2	3-4	5+	0-1	1	2	3-4	5+
Nfld.	-18.9	10.9	3.0	2.8	2.2	-20.0	- 3.9	-0.3	-16.5	26.1
P.E.I.	-18.6	- 1.3	15.4	2.8	1.8	1.4	-25.6	-2.6	5.5	21.4
N.S.	- 3.3	- 9.1	- 6.3	14.0	4.7	0.8	- 2.0	-7.0	6.3	4.3
N.B.	- 3.2	-26.1	24.6	6.7	-2.1	-1.5	-16.1	9.8	23.8	-15.2
Atlantic	- 7.6	- 7.7	6.6	7.9	1.6	-1.0	- 8.2	0.4	8.0	1.9
Man.	1.8	- 5.8	3.6	- 1.0	1.6	1.1	0.4	-6.2	- 7.4	17.9
Sask.	1.5	- 1.7	-27.6	23.6	4.8	1.2	- 0.6	-4.9	- 2.6	8.6
Alta..	- 1.7	- 3.3	-16.7	21.8	0.0	0.6	- 0.4	-9.8	9.7	0.0
B.C.	0.1	- 7.7	-12.6	21.2	-1.0	-0.3	- 1.1	-3.0	4.3	73.2
Western	0.1	- 4.4	-14.1	17.4	1.1	0.3	- 0.6	-6.0	5.6	1.8

Source: D.B.S. Salaries and Qualifications,1960-61; D.B.S. unpublished data.

training beyond junior matriculation.[1] In the first column of these tables will be found the number and per cent of teachers with less than one year of training beyond junior matriculation. In some instances they may have had no professional training at all, in other cases training may have been limited to a summer session of a few weeks. In a small percentage of cases a teacher in this category may have qualifications from outside the province which are yet to be evaluated and meanwhile would be teaching under a special letter of authority.

When the data for 1960-61 are compared with those for 1966-67 a general upgrading of teacher qualifications is evident. In the earlier year only 12.3 per cent of the elementary teachers and 61.2 per cent of the secondary teachers in the Atlantic Provinces had three or more years of training. In 1966-67 the percentages had risen to 21.8 and 71.1. In both years the percentage of teachers with three or more years of training was very much higher in the Western Region. In 1960-61, 30.1 per cent of the elementary teachers had three or more years of training, in 1966-67 the percentage was 48.6. In the same interval the percentage of secondary teachers in the Western Region with this level of training had risen from 78.5 to 85.9. The percentage increase in the Western Region for both elementary and secondary teachers was almost double that in the Atlantic Region during this period.

In 1966-67, 77.8 per cent of the elementary teachers in Newfoundland had one year or less of teacher preparation beyond junior matriculation. In Nova Scotia 24.8 per cent of the elementary teachers were in this category, in Saskatchewan only 3.6 per cent. In Prince Edward Island the percentage was 69.7, and in New Brunswick 43.9, for elementary teachers with one year or less of training. Manitoba was the only Western Province with more than 15 per cent of the elementary teachers in this category.

Table 2-18 presents for each province and region the per cent of teachers with degrees in 1960-61 and in 1966-67. In the Atlantic Region 16.5 per cent of all teachers held a university degree in 1960-61. This had changed to 23.4 per cent in 1966-67, an increase of 6.9 percentage points. In the Western Region the per cent of teachers with degrees in 1960-61 was 27.0, in 1966-67, 38.4, an increase of 11.4 percentage points. In the latter year, the Western Region had 7.8 per cent more of its elementary teachers with degrees than the Atlantic Region and 16.8 per cent more of its secondary teachers. Within the Atlantic Region, Nova Scotia had the highest percentage of teachers with degrees in both elementary and secondary schools.

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[1] In Appendix B will be found a statement prepared by the Canadian Teachers' Federation giving the level of training equivalents of the variety of teaching certificates issued by the various provinces.

TABLE 2-18

Per Cent of Teachers with Degrees, 1960-61 and 1966-67

Province or Region	1960-61				1966-67*			1961-67
	Elem.	El.-Sec.	Sec.	Total	Elem.	Sec.	Total	Percentage Point Change
Nfld.	3.8	14.9	43.0	10.7	6.0	46.4	15.3	4.6
P.E.I.	2.4	4.3	37.4	7.2	2.8	47.1	15.1	7.9
N.S.	11.4	40.7	71.9	23.8	16.5	64.9	32.0	8.2
N.B.	4.7	21.7	47.3	14.1	7.7	49.8	21.4	7.3
Atlantic	6.9	25.9	54.8	16.5	10.0	54.9	23.4	6.9
Man.	8.7	50.8	65.9	25.6	9.4	70.1	30.9	5.3
Sask.	4.1	15.6	59.7	16.7	9.3	64.0	28.0	11.3
Alta.	10.8	43.2	69.3	27.7	21.9	68.4	41.5	13.8
B.C.	17.1	55.5	81.2	37.0	25.3	74.8	46.3	9.3
Western	10.6	48.3	70.0	27.0	17.8	70.1	38.4	11.4

* Derived from D.B.S. unpublished data.

Source: D.B.S. Salaries and Qualifications,1960-61.

British Columbia had the highest percentage in the Western Region. For elementary teachers the range extended from 2.8 per cent in Prince Edward Island to 25.3 per cent in British Columbia, and for secondary teachers, from 46.4 per cent in Newfoundland to 74.8 per cent in British Columbia. Due to a more rapid increase in the per cent of teachers with degrees in the Western Provinces than in the Atlantic Provinces, the gap in qualifications between regions and provinces is widening. The significance of this finding will be given further consideration in discussion of education output.

Teacher Salaries

Teacher salaries reflect the three variables already considered - levels of training, experience, and tenure - as well as differences among provinces and regions in general wage scales. In Table 2-19 will be found the median salaries of elementary and secondary teachers in each province for 1960-61 and for 1966-67, with the per cent change between these years. For elementary teachers in 1960-61, the median salary in the Atlantic Region was approximately $2,400 compared with about $4,200 for the Western Region - about 75 per cent higher. The median for the Atlantic Region increased by 50 per cent between 1961 and 1967, while the Western median increased by 25 per cent. This left a difference between regions of about $1,700 or 48 per cent in 1966-67, a dollar difference only $100 less than in 1960-61.

In 1960-61 the differential between regions in median salaries of secondary teachers was approximately $2,000, the Western median being about 50 per cent higher than the Atlantic. From 1961 to 1967 the Atlantic median for secondary teachers in-

TABLE 2-19

A. Median Salaries, Elementary Teachers and Principals

Province	1960-61			1966-67*			% Change 1961-67		
	M	F	T	M	F	T	M	F	T
Nfld.	1,636	2,196	2,136	3,380	3,282	3,315	106.2	49.5	55.2
P.E.I	2,332	2,222	2,233	3,900	3,341	3,382	67.2	50.4	51.5
N.S.	3,218	2,629	2,670	5,090	3,936	3,954	58.2	49.7	48.1
N.B.	2,709	2,431	2,455	4,067	3,505	3,546	50.1	44.2	44.4
Man.	3,583	3,548	3,555	4,702	4,303	4,382	31.2	21.3	23.3
Sask.	4,046	3,943	3,956	5,633	4,825	4,940	39.2	22.4	24.9
Alta.	4,931	4,292	4,333	6,579	5,420	5,509	33.4	26.3	27.1
B.C.	5,385	4,751	4,894	6,717	5,771	6,020	24.7	21.5	23.0
Canada (ex.Qué.)	4,462	3,767	3,882	5,640*	5,704	4,875	26.4	51.4	25.6

B. Median Salaries, Secondary Teachers and Principals

Province	1960-61			1966-67*			% Change 1961-67		
	M	F	T	M	F	T	M	F	T
Nfld.	4,114	3,721	3,960	5,040	4,507	4,904	22.5	21.1	23.8
P.E.I.	3,749	2,752	3,132	5,125	4,403	4,706	36.7	60.0	50.3
N.S.	4,583	3,963	4,308	6,228	5,804	6,026	35.9	46.5	39.9
N.B.	4,480	3,612	3,977	5,772	4,871	5,347	28.8	34.9	34.4
Man.	5,468	5,004	5,246	7,156	5,950	6,587	30.9	18.9	25.6
Sask.	6,340	5,292	5,390	7,781	6,315	7,185	22.7	19.3	33.3
Alta.	6,782	5,255	6,136	7,594	6,333	7,000	12.0	20.5	14.1
B.C.	7,057	6,143	6,695	8,128	7,075	7,819	15.2	15.2	16.8
Canada (ex.Qué.)	6,526	5,532	6,054	7,586	6,470	7,148	16.2	17.0	18.1

* Derived from D.B.S. unpublished data.

Source: D.B.S. Salaries and Qualifications, 1960-61, 1964-65.

creased about 35 per cent while the Western median increased about 20 per cent. As a result, by 1966-67 the differential between regions had decreased by approximately $100, the Western median being some 36 per cent higher than the Atlantic median.

Differences in median salaries are to some extent related to the differences in teacher qualifications which have already been reported. In order to indicate the extent to which they may be due to factors other than qualifications, however, average salaries are examined separately for beginning teachers and for teachers with four to nine years experience, for various levels of training and in rural and urban areas. It is hypothesized that teacher recruitment, as well as retention, may be influenced not only by starting salaries but by income opportunities after a number of years of experience. In Appendix B will be found tables which give average salaries for the years 1960-61 and 1966-67, and the per cent change between these years, for both rural and urban teachers, according to level of teaching, level of training, and level of experience.

In 1966-67 the following range in average salaries prevailed for the categories of teachers described:

Elementary teachers with no experience and minimal training:
$2,335 in Nova Scotia to $3,631 in British Columbia.

Elementary teachers with no experience and four to seven years training:
$4,000 in Prince Edward Island to $5,786 in Saskatchewan.

Elementary teachers with four to nine years experience and minimal training:
$3,092 in Nova Scotia to $4,848 in Alberta.

Elementary teachers with four to nine years experience and four to seven years training:
$5,308 in Prince Edward Island to $7,311 in Saskatchewan.

Secondary teachers with no experience and two to four years training:
$3,248 in Newfoundland to $5,018 in British Columbia.

Secondary teachers with no experience and four to seven years training:
$4,132 in Prince Edward Island to $5,843 in Saskatchewan.

Secondary teachers with four to nine years experience and two to three years training:
$4,164 in Nova Scotia to $6,212 in British Columbia.

Secondary teachers with four to nine years experience and four to seven years training:
$5,788 in Newfoundland to $7,900 in Saskatchewan.

In Appendix B will be found recent provincial salary scales for the provinces of New Brunswick and Newfoundland and, for comparative purposes, a sample of salary scales from urban and rural districts of Alberta. The higher qualifications of teachers in the Western Provinces, together with the somewhat higher salary scales, would indicate that current expenditures on education are considerably higher in the Western Region than in the Atlantic Region.

Expenditures on Education

Local and provincial expenditures on elementary and secondary education in 1965 are given in Table 2-20. For the Atlantic Region about 46 per cent of the revenues came from local sources and 54 per cent from provincial sources. In the Western Region the proportions were 51.5 per cent local and 48.5 per cent provincial. In that year 88 per cent of the education revenues in Newfoundland were from provincial sources, while in New Brunswick the province provided only 32 per cent of the revenues.

When expenditures on education were related to the total revenues of local and provincial jurisdictions, the two regions compared as follows in 1965: education expenditures comprised 60 per cent of local and 26.5 per cent of provincial revenues in the Atlantic Region compared with 49.5 per cent of local and 32 per cent of provincial revenues in the Western Region.

The distribution and per cent distribution of school board expenditures in 1967 is shown by province in Table 2-21. In both regions about 14 per cent went for capital expenditures in that year and 86 per cent for operating. In the Atlantic Region teacher salaries accounted for 73.6 per cent of the operating expenditures, while in the Western Region they accounted for 66.8 per cent. Teacher salaries range from 64.1 per cent of the operating expenditures in Saskatchewan to 74.9 per cent of the operating expenditures in Newfoundland. In the Western Provinces a larger proportion of the operating expenses went to other services, such as transportation, than in the Atlantic Provinces.

The increase in expenditures on education from 1956 to 1965 is expressed in Table 2-22 on the basis of "per pupil in average daily attendance" and "per capita". Figure 2-7 illustrates the change from 1951 to 1965 on a "per pupil" basis, and Figure 2-8 the change from 1958 to 1965 on a "per capita" basis. The average per-pupil expenditure of $286 in 1965 represented an increase of 92 per cent from 1956 for the Atlantic Provinces, but remained $237 (45 per cent) below the average for the Western Provinces. Per-pupil expenditures in the West had increased by $231 or 79 per cent during that nine-year period. The range among provinces extended from $216 per pupil in Newfoundland to $581 per pupil in British Columbia in 1965.

TABLE 2-20

Expenditures on Elementary and Secondary Education,* 1965

Province or Region	Expenditures			Revenue Source		Expenditures as % of Total Revenues	
	Local $ 000	Provincial $ 000	Total $ 000	Local %	Prov. %	Local %	Prov. %
Newfoundland	3,426	25,250	28,676	11.9	88.1	6.6	32.4
Prince Edward Island	2,578	4,813	7,391	34.9	65.1	54.1	22.0
Nova Scotia	28,819	31,947	60,766	47.4	52.6	57.0	30.6
New Brunswick	30,906	14,399	45,305	68.2	31.8	75.6	17.7
Atlantic	65,729	76,409	142,138	46.2	53.8	60.3	26.5
Manitoba	48,139	50,290	98,429	48.9	51.1	46.3	32.0
Saskatchewan	56,956	50,071	107,027	53.1	46.7	50.0	25.0
Alberta	86,427	89,159	175,586	49.2	50.8	49.8	39.7
British Columbia	107,834	92,097	199,931	53.9	46.1	49.0	28.4
Western	299,356	281,617	580,973	51.5	48.5	49.5	31.7

* Excluding Federal Grant contributions.

Source: Derived from D.B.S. unpublished data.

TABLE 2-21

School Board Expenditures on Elementary and Secondary Education, 1967

Province or Region	Expenditures					As % of Total			As % of Operating	
	Total	Capital	Operating	Salaries	Other	Capital	Operating	Salaries	Salaries	Other
	------------------ $ 000				--------------------	%	%	%	%	%
Nfld.	26,100	3,455	22,645	16,960	5,685	13.2	86.8	65.0	74.9	25.1
P.E.I.	6,685	974	5,711	3,887	1,824	14.6	85.4	58.1	68.1	31.9
N.S.	54,679	8,048	46,631	34,488	12,143	14.7	85.3	63.1	74.0	26.0
N.B.	40,926	4,875	36,051	26,392	9,659	11.9	88.1	64.5	73.2	26.8
Atlantic	128,390	17,352	111,038	81,727	29,311	13.5	86.5	63.7	73.6	26.4
Man.	80,774	12,073	68,701	46,040	22,661	14.9	85.1	57.0	67.0	33.0
Sask.	99,771	13,545	86,226	55,250	30,976	13.6	86.4	55.4	64.1	35.9
Alta.	164,897	23,939	140,958	95,991	44,967	14.5	85.5	58.2	68.1	31.9
B.C.	185,334	27,274	158,060	105,759	52,301	14.7	85.3	57.1	66.9	33.1
Western	530,776	76,831	453,945	303,040	150,905	14.5	85.5	57.1	66.8	33.2

Source: Derived from D.B.S. unpublished data.

TABLE 2-22

Per-Pupil and Per-Capita Expenditure on Education

Province or Region	Per Pupil in Average Daily Attendance						Per Capita					
	1956	1959	1962	1965*	Change 1959-65	% Change 1959-65	1956	1959	1962	1965	Increase 1959-65	% Increase 1959-65
	$	$	$	$	$	%	$	$	$	$	$	%
Newfoundland	124	152	175	216	64	42.1	27	37	45	57	20	54.1
Prince Edward Island	118	167	227	298	131	78.4	22	32	48	68	36	112.5
Nova Scotia	180	232	292	334	102	44.0	36	50	66	80	30	37.5
New Brunswick	175	210	234	297	87	41.4	36	46	54	72	26	56.5
Atlantic	149	190	232	286	96	50.5	30	41	53	69	28	68.3
Manitoba	222	347	361	483	136	39.2	38	59	72	102	43	72.9
Saskatchewan	278	352	399	495	143	40.6	51	70	86	113	43	61.4
Alberta	328	416	538	531	115	27.6	61	82	116	124	42	51.2
British Columbia	340	419	453	581	162	38.7	53	71	85	119	48	67.6
Western	292	384	438	523	139	36.2	51	71	90	115	44	62.0
Western-Atlantic	143	194	206	237	-	-	21	30	37	46	-	-

* D.B.S. unpublished data.

Source: D.B.S. Survey of Education Finance, 1963.

On a per-capita basis expenditures in the Atlantic Region had increased by $39 or 130 per cent from 1956 to 1965, and in the Western Region by $64 or 125 per cent. The Western per-capita average in 1965 was $46 (67 per cent) above the Atlantic average. The range extended from $57 in Newfoundland to $124 in Alberta.

Expenditure levels on elementary and secondary education reflect differences in education load and differences in teacher salaries and other operating expenditures. They do not necessarily reflect either ability or effort to support education - questions which are not dealt with in this report. The ability to support educational programs is a function not only of provincial income and the proportion of that income taxed by provincial and local government authorities, but also of transfers from the federal government to provincial governments. In recent years there have been significant changes in the system of federal transfers to provincial governments which will undoubtedly affect the ability of the Atlantic Provinces to support education. However, the impact of these changes on education expenditures has not yet been assessed.

FIGURE 2-7

Total Local and Provincial Expenditure on Elementary and Secondary Education Per Pupil in Average Daily Attendance

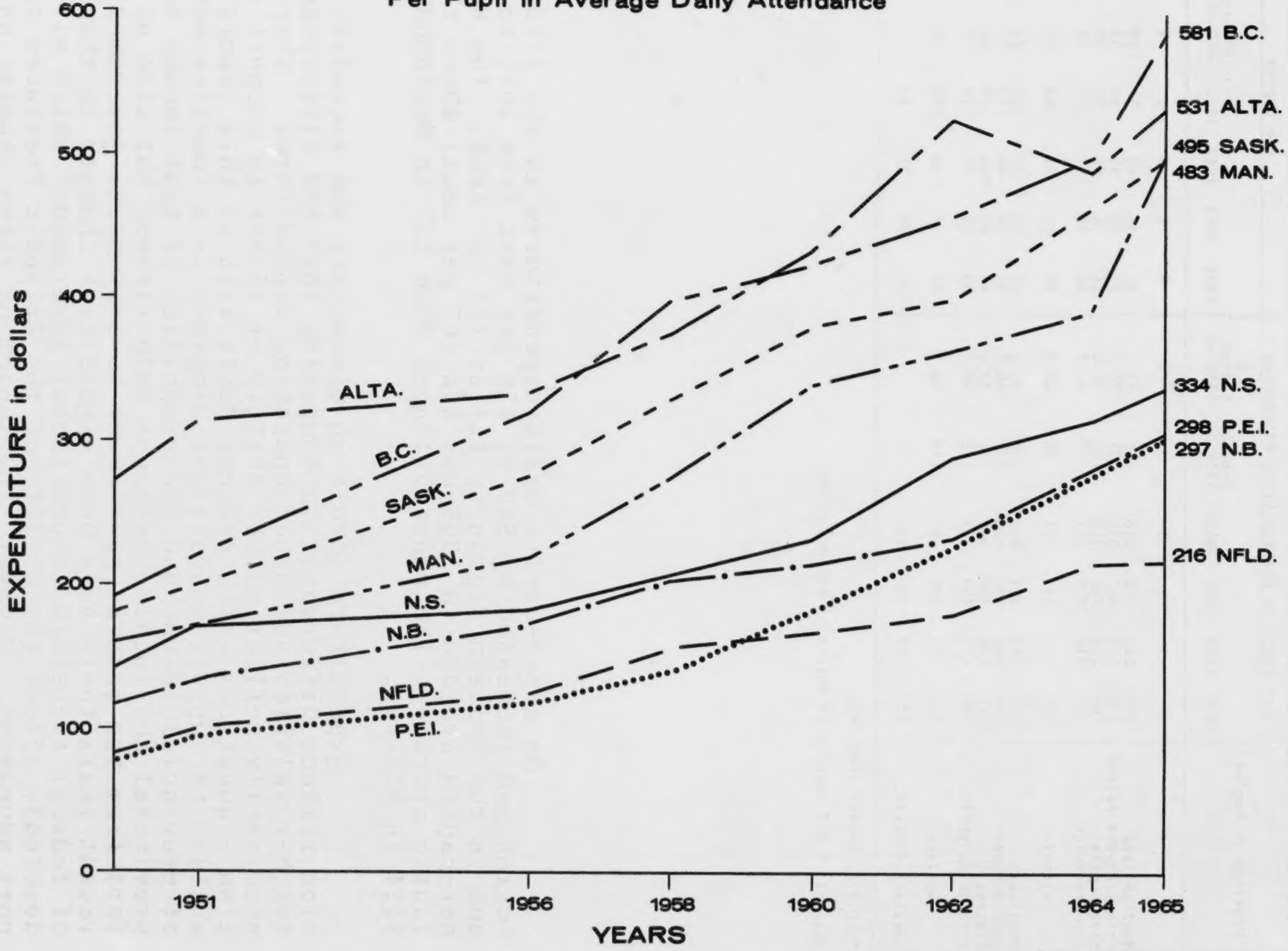
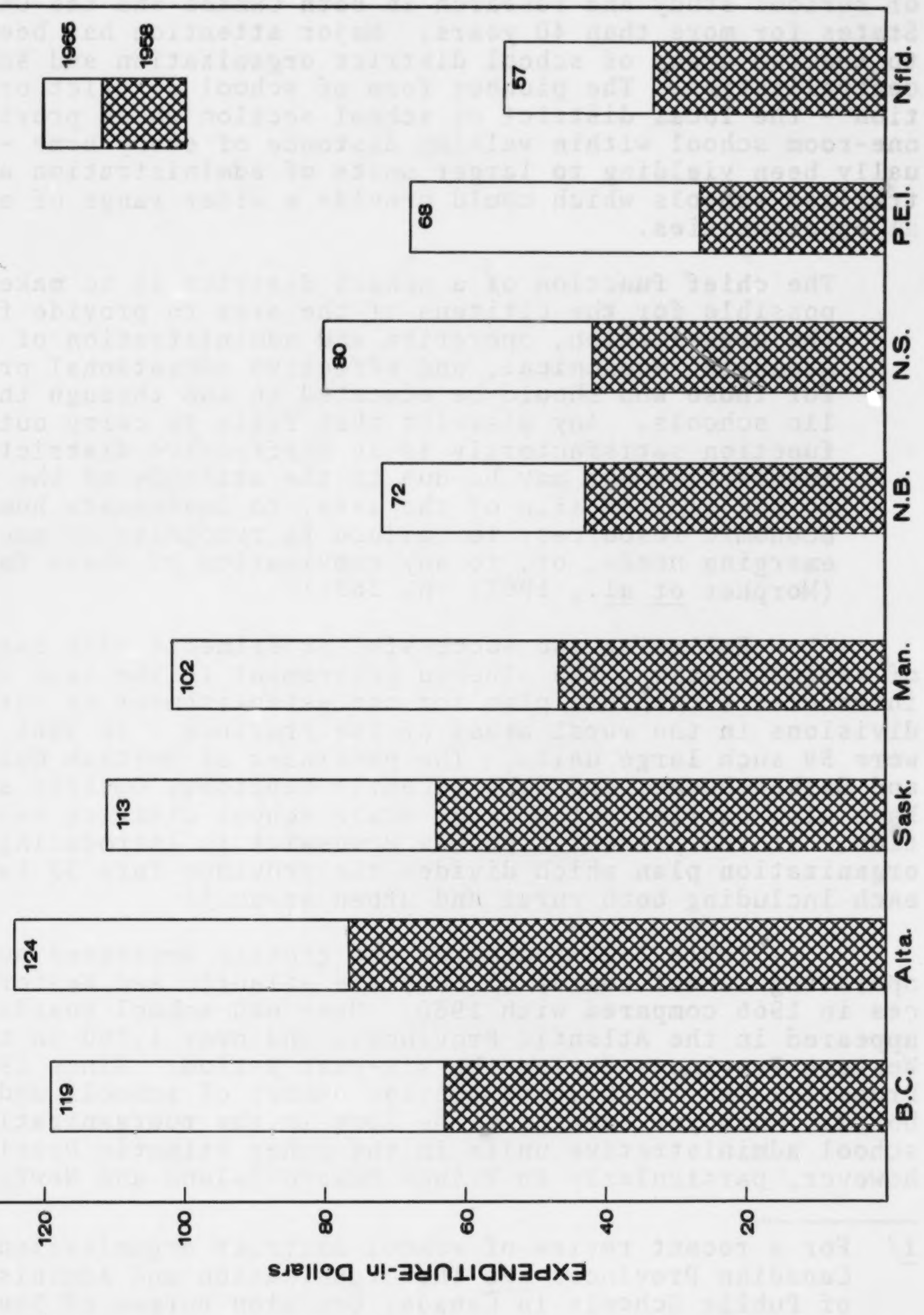


FIGURE 2-8

TOTAL LOCAL AND PROVINCIAL EXPENDITURE ON ELEMENTARY AND SECONDARY EDUCATION PER CAPITA



School Organization

Patterns of school organization have been the subject of serious study and research in both Canada and the United States for more than 40 years. Major attention has been given to the two areas of school district organization and school centralization. The pioneer form of school district organization - the local district or school section which provided a one-room school within walking distance of every home - has gradually been yielding to larger units of administration and centralized schools which could provide a wider range of educational opportunities.

> The chief function of a school district is to make it possible for the citizens of the area to provide for the organization, operation and administration of an adequate, economical, and effective educational program for those who should be educated in and through the public schools. Any district that fails to carry out this function satisfactorily is an ineffective district. The ineffectiveness may be due to the attitude of the people, to the limited size of the area, to inadequate human or economic resources, to failure to recognize or meet emerging needs, or, to any combination of these factors. (Morphet et al., 1967: p. 269.)

Following two successful experiments with large units of administration, the Alberta government in the late 1930's introduced a complete plan for the establishment of large school divisions in the rural areas of the province. In 1965 there were 59 such large units. The provinces of British Columbia and Saskatchewan, and more recently Manitoba, Ontario and Québec have also carried out a large-scale school district reorganization. At the present time New Brunswick is introducing its reorganization plan which divides the province into 33 large units, each including both rural and urban areas.1/

Table 2-23 indicates the greatly decreased number of operating school boards in both the Atlantic and Western Provinces in 1966 compared with 1960. Over 600 school boards disappeared in the Atlantic Provinces, and over 1,700 in the Western Provinces during the six-year period. Since 1967 New Brunswick has the highest average number of schools under one board. Much yet remains to be done in the reorganization of school administrative units in the other Atlantic Provinces, however, particularly in Prince Edward Island and Newfoundland.

1/ For a recent review of school district organization in the Canadian Provinces see The Organization and Administration of Public Schools in Canada, Dominion Bureau of Statistics, 1966.

TABLE 2-23

Public School Organization, 1960-66

Province or Region	School Boards*			Schools			Classrooms			Teachers			Pupils		
	1960	1966	1960 -1966	1960 -1961	1966 -1967	1960 -1966	1960 -1961	1966 -1967	1960 -1966	1960 -1961	1966 -1967	1960 -1966	1960 -1961	1966 -1967	1960 -1966
Nfld.	307	270	-37	1,235	1,165	-70	4,011	5,625	1,614	4,317	5,644	1,327	129,276	147,760	18,484
P.E.I.	469	373	-96	448	380	-68	932	1,208	276	969	1,318	349	24,416	28,597	4,181
N.S.	1,576	1,241	-335	1,292	855	-437	6,039	7,685	1,646	6,664	8,033	1,369	179,771	200,681	20,910
N.B.	605	436	-169	1,472	1,050	-422	5,377	6,600	1,223	5,866	6,927	1,061	147,479	166,750	19,271
Atlantic	2,957	2,320	-637	4,447	3,450	-997	16,359	21,118	4,759	17,816	21,922	4,106	481,942	543,788	62,846
Man.	1,631	936	-695	1,730	1,250	-480	5,842	8,950	3,108	7,460	9,432	1,972	183,650	224,532	40,882
Sask.	5,450	4,440	-1,010	2,321	1,250	-1,071	8,189	10,800	2,611	8,638	10,923	2,285	206,430	242,137	35,707
Alta.	204	203	-01	1,100	1,220	120	10,650	16,580	5,930	11,762	16,358	4,596	292,000	372,894	80,894
B.C.	87	87	0	1,247	1,425	178	10,037	15,660	5,623	11,868	16,966	5,098	316,821	439,692	122,871
Western	7,372	5,666	-1,706	6,398	5,145	-1,253	34,718	51,990	17,272	39,728	53,679	13,951	998,901	1,279,255	280,354

* Total of all boards.

Source: D.B.S. Salaries and Qualifications of Teachers in Public Elementary and Secondary Schools, 1960-61; and Preliminary Statistics of Education, 1960-61 and 1966-67.

In a discussion of the desirable minimum size of school districts Morphet writes,

> Research shows that reasonable economy of scale cannot be attained in districts with a school population of fewer than 10,000 pupils. Districts that are smaller in size are faced with rapidly increasing unit costs for an adequate educational program as the number of pupils decreases. In districts of fewer than 1,200 pupils, the unit costs become so great that such opportunities can seldom be provided. Therefore, the minimum acceptable size of school districts should be 10,000 pupils in all except the most sparsely settled areas where the minimum should be established at not less than 5,000. (Morphet et al., 1967: p. 270.)

The Royal Commission on Education and Youth (Newfoundland and Labrador, 1967) gave some consideration to school district reorganization in that province, a problem complicated by the denominational form of organization. Its report stated:

> One of the basic problems of Newfoundland education is the large number of school boards in the Province serving relatively few students. A sparse population, denominational differences, community rivalries, and the lack of adequate transportation and communication services are among the reasons why only 22 out of a total of 270 boards in 1965-66 served 1,000 pupils or more.... Some 40 boards had fewer than 100 pupils in their charge, and another 64 had from 100 to 199 pupils. A total of 200 boards or 74 per cent served fewer than 500 pupils.
>
> Small school boards cannot provide economically the services needed for modern education. They cannot employ a director of education to advise the board or give leadership to the teaching staff. They generally provide small schools with inadequate facilities and restricted educational programmes. They find it difficult to attract and hold quality teachers and principals and are unable to provide specialized services such as health programmes, guidance, library facilities, audio-visual aids, auxiliary classes, and instruction in music, art, physical education, industrial arts, and home economics.

An eventual outcome of the establishment of larger units of administration is some degree of centralization of school facilities. As reorganization of districts results in an equalization of financial resources and responsibilities, so centralization of facilities helps to equalize and extend educational opportunities. The size of school, as well as the size of school district, is an important factor in determining the degree to which professional resources can be attracted, held, and effectively utilized. A trend toward school centralization is indicated in Table 2-23 which shows a reduction of 1,000 schools in the Atlantic Provinces from 1960 to 1966, and at the same time an increased school enrolment of nearly 63,000. In 1960 there was an average of four teachers per school; in 1966 the average had increased to six. The average enrolment per school was 108 in 1960 and had increased to 158 in 1967. Only a small beginning, however, has been made toward solving the important problems of school centralization.

Table 2-24 indicates the per cent change from 1960 to 1966 in school boards, schools, classrooms, teachers and pupils.

In relation to minimal school size Morphet has stated,

> Whenever practicable an elementary school should have sufficient pupils to warrant at least 2 teachers per grade or age group, and a junior or senior high school should have at least 100 pupils in each age group. Elementary and high schools having at least twice this minimum are usually in a position to provide a more adequate program at a more reasonable cost. (Morphet _et_ _al_., 1967: p. 271.)

Using Morphet's criteria, and adding one more - that not less than three grades should constitute an educational unit - the minimum size of school that might operate with any degree of efficiency and effectiveness would be a six-room school. Such a unit might be suitable for the primary grades where transportation distances were great. A six-grade elementary school organization would require a 12-room school, and an eight-grade elementary school a 16-room school. Using Morphet's criteria for high schools, the minimum size of a three-grade high school would be 300 pupils, or 12 rooms, of a four-grade high school 400 pupils or 16 rooms.

In 1966 there were 400 schools in Nova Scotia and nearly 900 in Newfoundland which would not meet the minimum standard of six rooms. Over 78,000 pupils attended these small schools. There were an additional 106 schools in Nova Scotia and 141 in Newfoundland which had six to eight rooms, accommodating another 36,000 pupils. In Nova Scotia 59 per cent of all schools had eight rooms or less in 1966, and accommodated 22 per cent of the total school population. In Newfoundland 87 per cent of all schools were in this category, accommodating 57 per cent of all pupils.1/

1/ For a discussion of the inadequacies of small schools _see_ Newfoundland and Labrador (1967) and Downey (1965).

TABLE 2-24

Per Cent Change in School Organization, 1960-66

Province or Region	Boards	Schools	Classrooms	Teachers	Pupils
	%	%	%	%	%
Newfoundland	-12	-06	40	31	14
Prince Edward Island	-20	-15	30	36	17
Nova Scotia	-21	-34	27	21	12
New Brunswick	-28	-29	23	18	13
Atlantic	-22	-22	29	23	13
Manitoba	-43	-28	53	26	22
Saskatchewan	-19	-46	32	26	17
Alberta	-	11	56	39	28
British Columbia	-	14	56	43	39
Western	-23	-20	50	35	28

Source: Table 2-23.

If all schools of less than six rooms were to be replaced with classrooms in centralized schools, with an average enrolment of 20 pupils, it would be necessary to build 1,150 classrooms in Nova Scotia and 2,764 in Newfoundland. This would be the equivalent of 77 fifteen-room schools in Nova Scotia and 184 fifteen-room schools in Newfoundland. Using an estimate of $20,000 per classroom, this building program would represent a cost of $23 million for Nova Scotia and $55 million for Newfoundland. The estimate of cost is based upon an analysis of costs in Alberta over a three-year period, and represents an average cost for both elementary and secondary schools and includes all ancillary space such as libraries, gymnasiums, offices, etc., and some landscaping. To replace all schools of eight rooms or less would cost Nova Scotia an estimated $65 million, and Newfoundland $82 million.

This basis of estimating centralization needs was not used for either New Brunswick or Prince Edward Island as the departments of education in these provinces already had preliminary plans for centralization drawn up. Using the number of classrooms provided for in these plans, and an estimate of $20,000 per classroom,the capital cost in New Brunswick would be $55 million and in Prince Edward Island $12 million, to carry out their programs. If these estimates are combined with the estimated replacement costs of schools of less than six rooms in Nova Scotia and Newfoundland, a total of $145 million would be required to provide a minimum centralization of education facilities in the Atlantic Provinces.

Summary

This section has compared the inputs of the education systems of the Atlantic Provinces with those of the Western Provinces in terms of pupils, teachers, expenditures, and school organization. It has shown the growth which has taken place in education need in all provinces during the last decade and indicated that this need for education may be beginning to level off with the falling birth rates, though increased school retention rates may tend to offset this trend. The higher birth rates in the Atlantic Provinces have resulted in a higher ratio of school-age population to working-age population resulting in a greater education need in that region than in the Western Region.

Education load, in terms of the proportion of the total population enrolled in public schools, has been somewhat greater in the Atlantic Region. In both regions education load has shown a very marked increase in the last 15 years, particularly at the secondary level. There are some differences in distribution of the load among age levels, with some provinces having a higher percentage of five-year-olds in preprimary classes, whereas other provinces had a higher representation of the 15-19 age group in high school.

Expenditures on education per pupil and per capita were considerably lower in the Atlantic Region. Expenditures per pupil ranged from $216 in Newfoundland to $581 in British Columbia, and expenditures per capita from $57 in Newfoundland to $124 in Alberta. These differences reflected differences in teacher salaries and other operating costs. The median salary for elementary teachers in the Atlantic Region was $1,700 below that of the Western Region, and the median salary for secondary teachers $1,900 below. This differential may be accounted for in part by lower teacher qualifications, and in part by lower wage scales in the Atlantic Provinces.

A limited examination was made of factors relating to school organization with particular emphasis on school district reorganization and centralization of school facilities. The capital investment necessary to replace the large number of small schools by more adequate centralized units is of the order of $145 million.

3. INTERPROVINCIAL DIFFERENCES IN OUTPUTS

The measurement of educational output is one of the most difficult problems in educational research.[1] This is due in part to the generality and complexity of education goals, in part to the problems of differentiating between those learnings which can be attributed to schooling and those gained elsewhere, and in part to the difficulties of developing valid and reliable measures of those outcomes of education which can be specifically defined and isolated. Because of provincial autonomy in educational matters, each province in Canada has independently determined its own standards and evaluative practices. This makes any interprovincial comparisons of education output both difficult and hazardous.

A traditional feature of Canadian school systems has been the external examination prepared and marked at the provincial level. At one time such examinations were common at every grade level from the completion of elementary schooling to high school leaving. During the past few decades, however, considerable modification of this procedure has taken place. Nevertheless the practice still prevails of holding provincial examinations at the termination of the high school program either to set matriculation standards for university entrance, or to determine levels of attainment for a general high school diploma. The grade level at which these examinations are given varies from province to province according to the length of the high school program. In some provinces this program terminates at Grade 11, in others at Grade 12, and in still others at Grade 13. Practices also vary among provinces with regard to external examinations at grades below high school leaving.

One measure of educational output sometimes used in Canadian studies has been graduation rates at the "junior matriculation" level. Some suggestion of the measurement of quality as well as quantity of output is implied in the use of this measure. A number of difficulties arise, however, with the use of this indicator. Many provinces no longer use the standard called "junior matriculation" and have neither external nor internal examinations to mark it. As it is commonly applied it refers to different grade levels in different provinces. In Nova Scotia and Alberta, for example, "junior matriculation" is designated as Grade 11 while in New Brunswick and British Columbia it is Grade 12. British Columbia has a Grade 13 which is considered to be "senior matriculation", hence Grade 12 is accepted as "junior matriculation". Alberta, on the other hand, which terminates secondary education with Grade 12, has designated it as "senior matriculation" and Grade 11 as "junior matriculation". Yet is is very common for Grade 12 students in

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[1] For a discussion of the problems associated with a productivity index for education see Benson (1961): p. 351-353.

Alberta to take two years to complete that grade, thus many have in effect a 13th year. This is illustrated by the fact that there were 1,407 more students in Grade 12 than in Grade 11 in 1965 in that province. Normally a considerable dropout might have been expected between these grades.

For the purposes of making interprovincial comparisons in this study the measure of education output used will be the retention rate of students to Grade 11. Grade 11 is selected because it marks the last year of high school in Newfoundland, and because students may be admitted to university in some provinces after reaching this standard. Retention rate is a measure of the holding power of the school and represents the years of schooling attained by school leavers. Years of schooling is a measure often used by economists in estimating the stock of education in the labour force. It is a readily obtainable, objective measure of education output which can be applied on an international, interprovincial, or subprovincial scale. It is, admittedly, a very rough indicator of the quantitative aspects of the productivity of education systems, and gives no indication of its qualitative aspects.

Pupil Retention Rates

Using a cohort survival method, the Education Division of the Dominion Bureau of Statistics has carried out two national studies of pupil retention rates.1/ The first study, published in 1960, followed selected eight-year-old cohorts in 1948-49 through the school systems to 1958-59. In the second study, published in 1965, similar cohorts were followed through the schools in the period from 1951-52 to 1963-64. The major findings of these studies, as they relate to the provinces of the Atlantic and Western Regions, are presented by means of line graphs in Figures 2-9 and 2-10. These figures illustrate the considerable improvement in retention rates attained by all provinces in the interval between these studies. They also indicate quite clearly that the holding power of the schools in the Atlantic Provinces was considerably below that of the schools in all the Western Provinces in both studies. This finding conforms with data already presented in Table 2-7, column (d), which showed a higher percentage of the 15-19 age group in school in the Western Region than in the Atlantic Region.

Using Grade 11 as a cut-off point, for reasons already stated, Figure 2-11 illustrates the differences in retention rates among the provinces of the two regions as reported in both studies. The improvement already noted during the six-year interval was more marked in some provinces than in others. In the Atlantic Region, New Brunswick showed the greatest improvement

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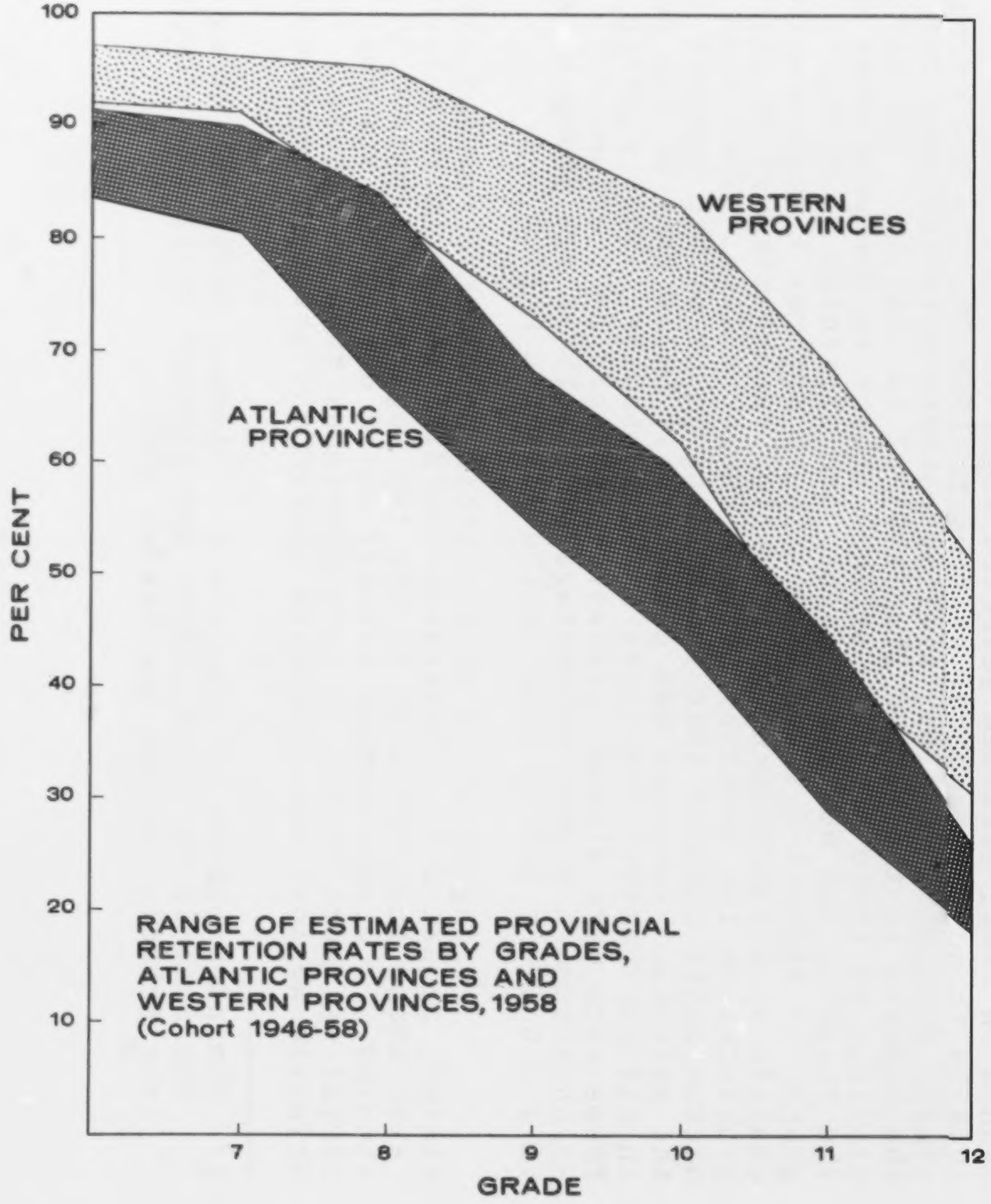
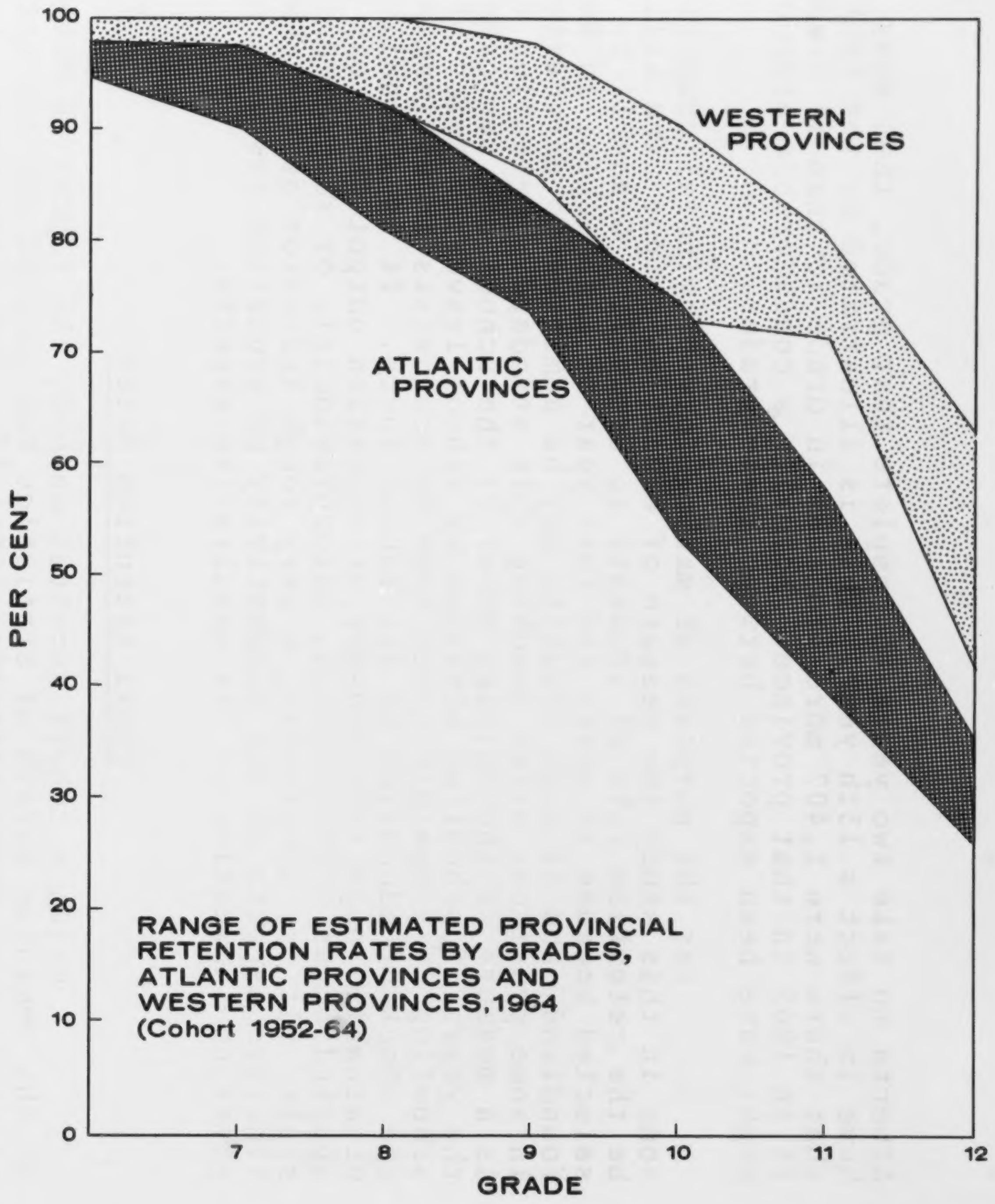
1/ Dominion Bureau of Statistics. Student Progress Through the Schools by Grade, 1960; and Student Progress Through the Schools, by Age and Grade, 1965.

FIGURE 2-9



RANGE OF ESTIMATED PROVINCIAL RETENTION RATES BY GRADES, ATLANTIC PROVINCES AND WESTERN PROVINCES, 1958 (Cohort 1946-58)

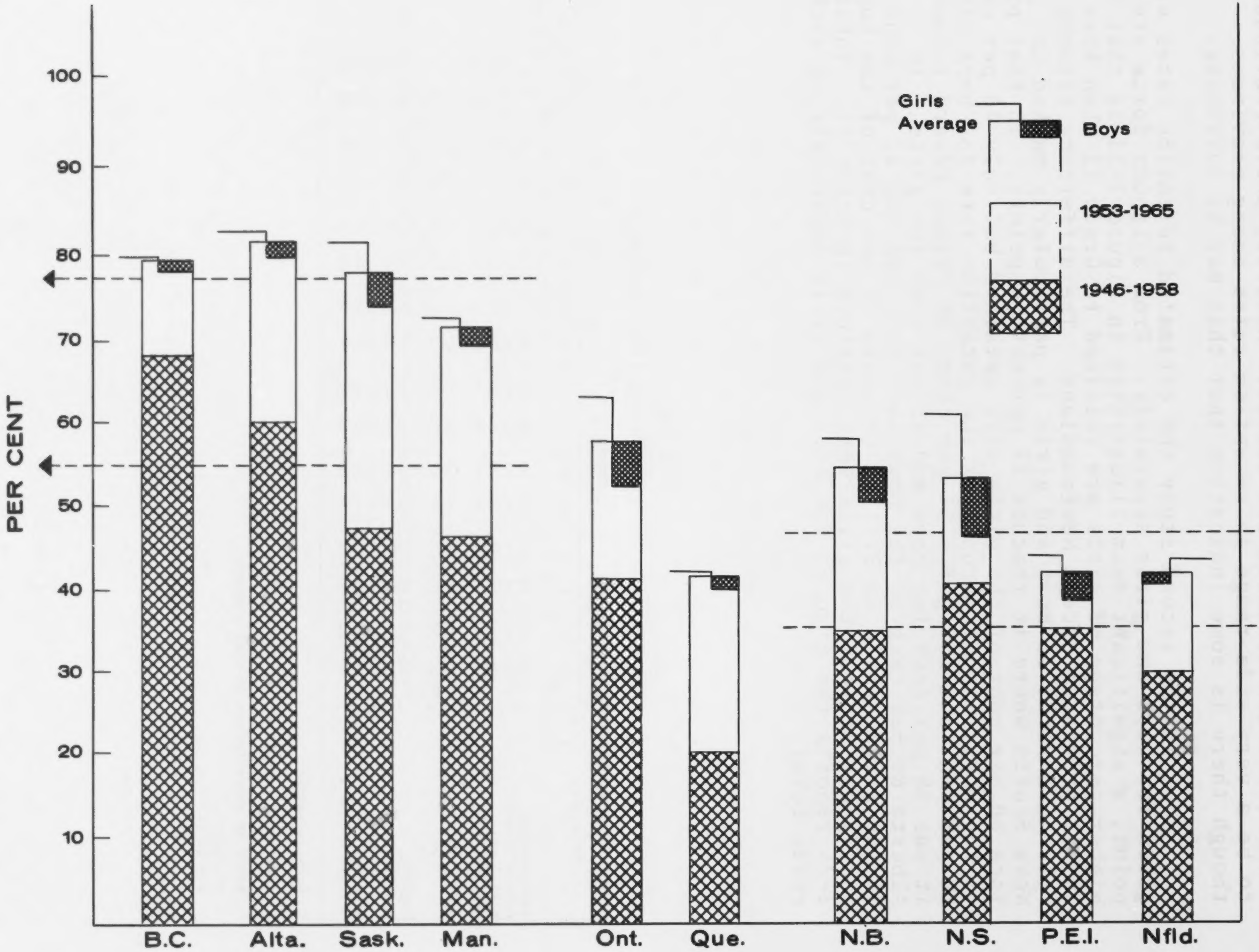
FIGURE 2-10



RANGE OF ESTIMATED PROVINCIAL RETENTION RATES BY GRADES, ATLANTIC PROVINCES AND WESTERN PROVINCES, 1964 (Cohort 1952-64)

FIGURE 2-11

Estimated Retention Rate, Grade 2 to Grade 11



in retention rates, Prince Edward Island the least. Among the Western Provinces, Saskatchewan had the highest rate of increase, British Columbia the lowest. However, there continues to be a very wide range in retention rates among provinces, though there is some indication that this may be narrowing.

In the second study the estimated retention rates are given for boys and girls separately. From a labour force standpoint, a significant fact illustrated in Figure 2-11 is that a higher percentage of girls are retained to Grade 11 than boys in all provinces except Newfoundland. The difference between retention rates of boys and girls is particularly marked in Nova Scotia where it reaches 14 percentage points. In that province 60 per cent of the girls were retained but only 46 per cent of the boys. In New Brunswick the retention rate for boys was 50 per cent and for girls 57 per cent; in Prince Edward Island it was 38 per cent for boys and 43 per cent for girls. In Alberta 80 per cent of the boys were retained and 82 per cent of the girls; while in British Columbia 78 per cent of the boys and 79 per cent of the girls were retained to Grade 11. Table 2-25 reports the figures for boys and girls separately at each grade level.

TABLE 2-25

Estimated Retention Rate by Grades, 1952-54 to 1964-65

Province	2		6		7		8		9		10		11		12		13	
	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G
Newfoundland	100	100	95	98	89	93	81	86	68	72	51	54	43	40				
Prince Edward Island	100	100	94	96	92	91	80	82	66	73	59	73	38	43	28	29		
Nova Scotia	100	100	96	97	94	96	88	93	80	85	69	81	46	60	24	27		
New Brunswick	100	100	99	100	98	100	89	94	84	82	62	68	50	57	29	36		
Qué. RC	100	100	92	96	88	92	80	76	67	65	47	48	38	37	10	7		
Pr.	100	100	100	100	87	91	74	70	74	70	70	69	54	58	6	4		
Ontario	100	100	100	100	100*	100*	94*	100*	92*	98*	73‡	81‡	52‡	62‡	48‡	54‡	24#	28#
Manitoba	100	100	95	95	90*	93*	90*	93*	85	86*	73	72	72	71	46	40		
Saskatchewan	100	100	100	100	100	100	98	100	97	99	82	83	74	81	64	62		
Alberta	100	100	100	98	100	96	97	92	93	91	81	83	80	82	54	50		
British Columbia	100	100	100	100	100	100	100	100	96	95	89	90	78	79	64	62	12	8

* Formula method.

‡ Based on Annual Report of the Minister of Education.

# Based on grade factor (3-year average).

B = Boys
G = Girls

Source: D.B.S. Student Progress Through the Schools by Age and Grade, 1965, p. 13.

An examination of Table 2-26, which reports retention rates of boys and girls by age, reveals that in Nova Scotia 49 per cent of the boys age 17, and 45 per cent of the girls of that age, were retained in school. Similarly in New Brunswick 45 per cent of the boys age 17, and 39 per cent of the girls, were retained. These data would seem to contradict the findings reported in the previous table, 2-25. The explanation lies in the differences in retardation rates between boys and girls which are reported below. While more boys may be retained than girls they do not achieve the same grade level before dropping out.[1]

TABLE 2-26

Estimated Retention Rate by Age in Elementary and Secondary Schools

(Cohort Survival Technique)

Province	7	13	14		15		16		17		18	
			B	G	B	G	B	G	B	G	B	G
Nfld.	100	100	98	99	88	87	68	62	40	27	17	8
P.E.I.	"	"	93	97	80	85	68	78	38	42	18	16
N.S.	"	"	98	96	88	89	72	72	49	45	26	16
N.B.	"	"	97	96	83	83	64	65	45	39	21	11
Qué. RC	"	"	84	76	68	60	53	40	30	15	12	3
Pr.	"	"	98	93	90	82	63	54	36	22	11	10
Man.	"	"	92	94	87	88	78	77	59	49	33	16
Sask.	"	"	100	100	92	94	84	84	65	58	28	15
Alta.	"	"	98	97	92	92	81	80	61	52	31	18
B.C.	"	"	98	100	98	98	95	93	83	82	60	47

NOTE: Ontario data not available.

Source: D.B.S. Student Progress Through the Schools by Age and Grade, 1965, p. 23.

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[1] A report of some international studies of failures and drop-outs is given by Ferrez (1961).

Pupil Retardation Rates

The facts just presented relative to the differences between sexes in retention rates lead to an examination of differences in retardation rates. Retardation is related to school failure and is defined in this study as being one year or more older than the modal group for any grade. For example, the modal group for Grade 3 would be age eight. Any pupil in that grade who was 10 years old would be considered as one year over-age in grade, an 11-year-old would be considered as two years over-age in grade. This definition allows for differences in school starting age due to birth dates, but in so doing actually underestimates the retardation rate. Figure 2-12 presents, for each of the provinces in the two regions except British Columbia,[1/] the percentage of students one year or more over-age in grade.

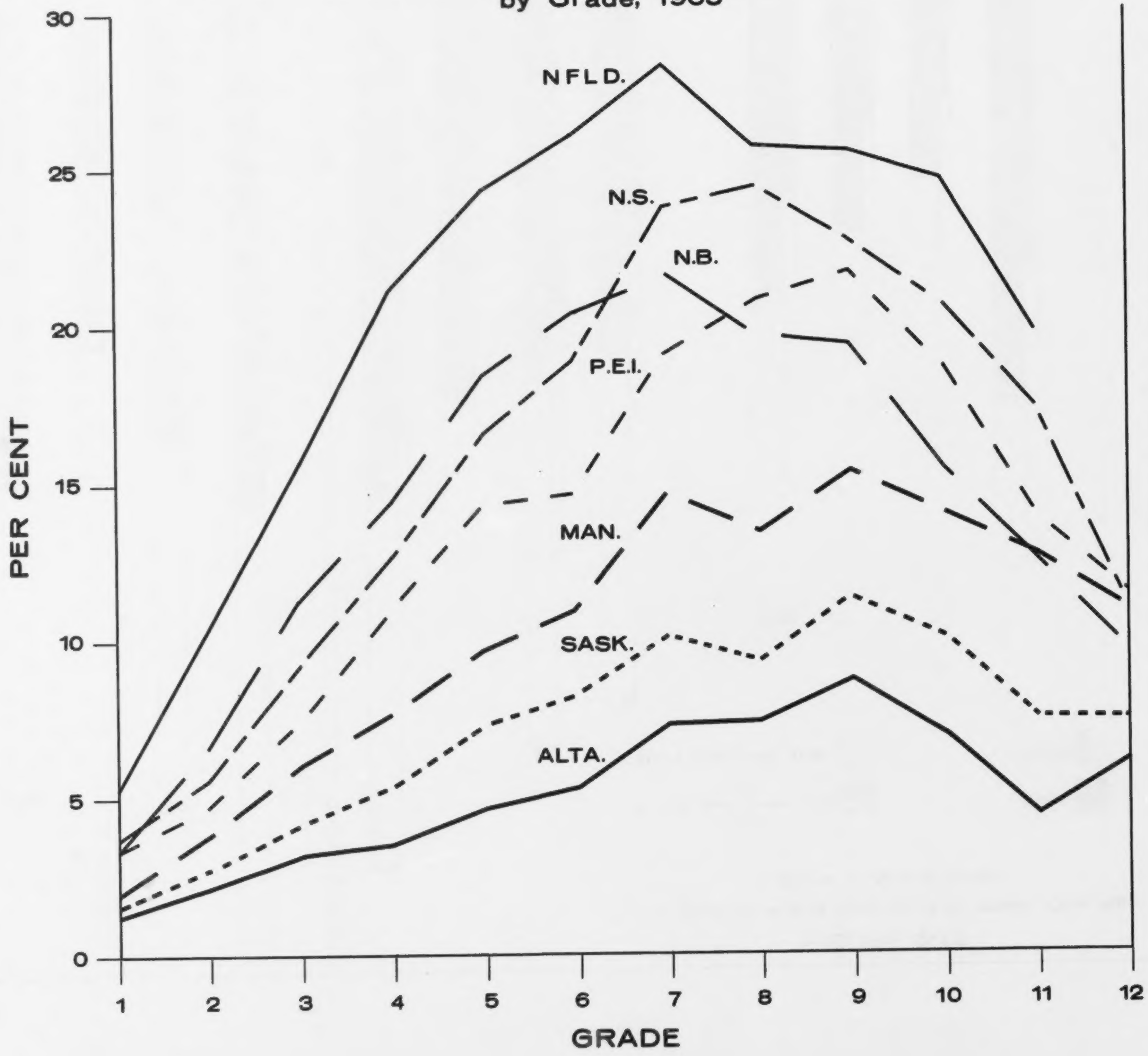
It is readily apparent that the retardation rates are very much higher in the provinces of the Atlantic Region than in the Western Region. It should also be noted that the retardation graphs for the Atlantic Provinces peak at an earlier grade level than do those of the Western Provinces. This peak marks the grade at which pupils who are over-age in grade begin to drop out of school. Had they not left school the graph would continue to rise or at least remain on a plateau. After Grade 9 there is a fall-off in retardation rates in all provinces indicating that some pupils in this category, having reached the legal leaving age, are dropping out.

The per cent of Grade 7 pupils over-age in grade is shown in Figure 2-13. For the provinces of the Atlantic Region retardation rates in 1961 are compared with those in 1965. No general pattern of change is apparent. Retardation rates dropped in Newfoundland and New Brunswick, remained about the same in Nova Scotia, and increased in Prince Edward Island. The bar graphs in this figure also indicate the proportions of those one year behind their age group and those more than one year. Rates for boys and girls are indicated separately. In some provinces almost half have experienced two or more years of failure. The percentage in the over-age category would appear to be higher in the Atlantic Provinces than in the Western Provinces. In the Atlantic Region as a whole, the retardation rates for boys are about double those for girls at the Grade 7 level. The percentage two years or more over-age in grade in these provinces is also higher for boys than for girls.

[1/] British Columbia is omitted only for the sake of pictorial clarity since its line would fall between or overlap those of Manitoba and Prince Edward Island.

FIGURE 2-12

Per Cent of Pupils One or More Years Over-Age in Grade, by Grade, 1965



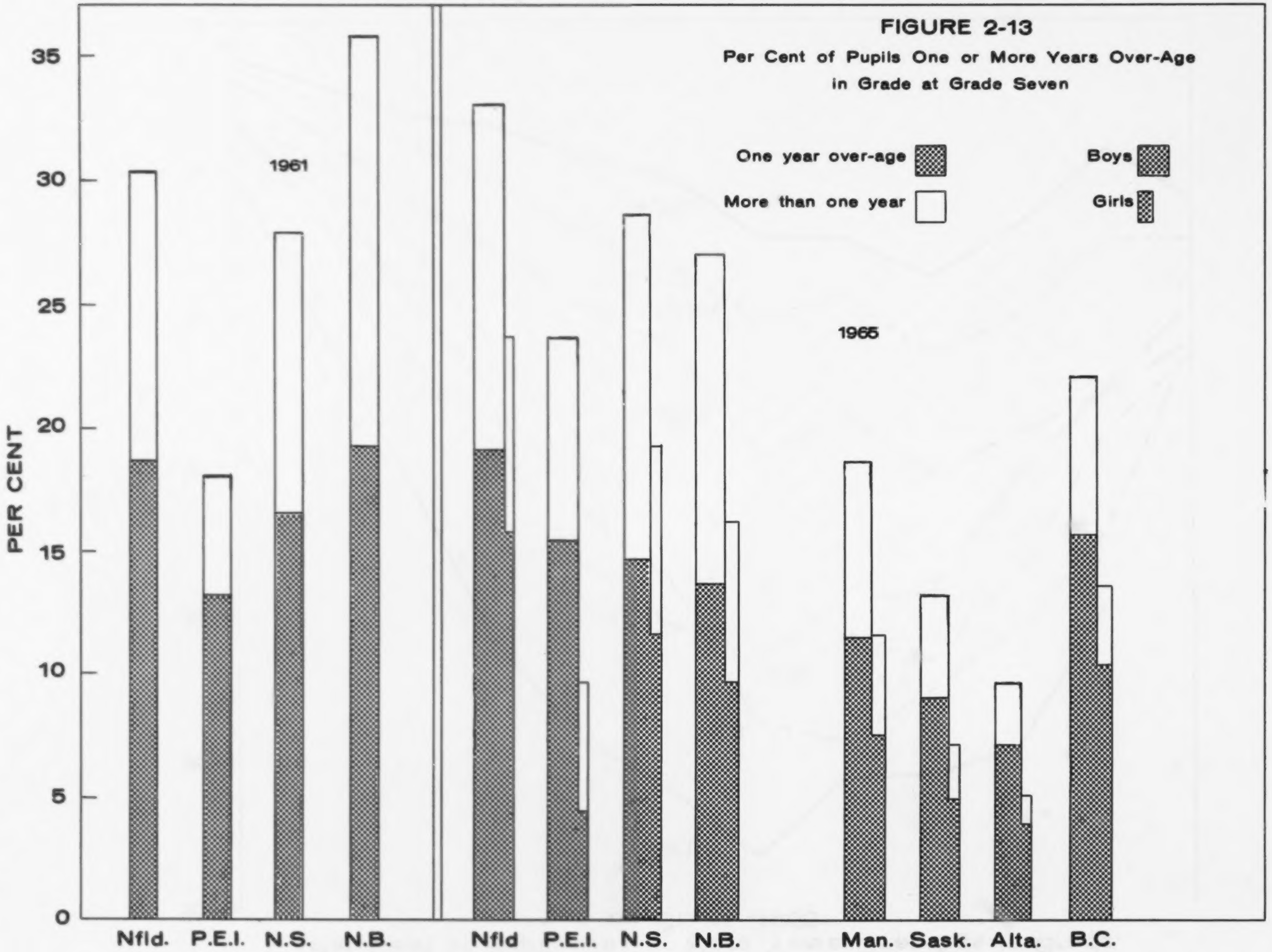


FIGURE 2-13

Per Cent of Pupils One or More Years Over-Age in Grade at Grade Seven

TABLE 2-27

Percentage of Grade Enrolment that is Repeating the Grade

(Calculated from data for school years 1961-62 to 1963-64)

Province	Sex	Grade								
		2	3	4	5	6	7	8	9	10
Newfoundland	B	16	14	13	13	9	11	10	24	20
	G	10	8	10	9	6	8	8	25	15
Prince Edward Island	B	7	6	5	7	6	6	12	10	10
	G	2	5	2	4	2	4	12	10	10
Nova Scotia	B	10	11	12	11	11	15	10	9	9
	G	6	6	7	7	9	11	7	5	4
New Brunswick	B	9	7	7	9	6	8	4	3	2
	G	5	5	4	5	4	5	4	2	1
Manitoba	B	10	8	7	8	7	12	4	10	5
	G	6	5	5	6	6	9	4	7	5
Saskatchewan	B	8	6	4	5	3	5	2	3	0
	G	4	3	2	3	2	3	1	3	0
Alberta	B	6	5	4	3	2	5	3	4	0
	G	3	2	2	3	3	6	7	7	0
British Columbia	B	7	5	3	3	2	4	7	8	2
	G	4	3	2	3	2	3	5	6	2

Source: D.B.S. Student Progress Through the Schools, by Age and Grade, 1965, p. 11.

The figure just considered presents the cumulative effects of retardation to the Grade 7 level only. For Newfoundland and New Brunswick this grade represented the peak of retardation rates, for other provinces it would be Grade 8 or 9. In Table 2-27 will be found a D.B.S. estimate of the percentage of each grade enrolment that was repeating the grade, based on data for 1961-62 to 1963-64. Grade 1 is omitted for this table, though retardation is widely practised at this level to compensate for lack of readiness for learning at the time of entering school. In 1964-65, 14 per cent of the Grade 1 pupils in Newfoundland, New Brunswick, and Prince Edward Island were repeating the grade. In Nova Scotia, 7 per cent were repeating. In each case about 60 per cent of the repeaters were boys. This higher failure rate for boys continues at each grade level until Grade 8 when some of the failures have dropped out of school. This distinction in failure rates between boys and girls disappears after Grade 4 in Alberta.

When this picture of retardation rates is coupled with the picture previously presented of retention rates, the serious implications of retardation policies for education output become apparent.

> There is probably no school system in the world which is not in one way or another concerned about a proportion of pupils who fail. Such failure, as studies in the past fifty years have repeatedly shown, is costly in terms of the efficiency of the school system itself. This is not to say that all failure is to be avoided or indeed that it can be. We do, however, need to know just what the extent of the problem may be in any school system and we should be in a position to go some way toward so controlling it that there be waste neither of teaching time and effort nor of the human capital represented by the failing pupils. (Wall and Olson, 1962.)

Perhaps more serious even than the cost of failure to the school system is the cost of failure to the pupil himself. "Competent observers, who have made an astute assessment of what has happened recently, see failure as the fundamental reason for violent discontent - failure as evidenced by poverty, slums, unemployment, racial tensions, abysmal insecurity and what have you." (Campbell, 1967.)

Associations Among Inputs and Outputs

The association between expenditures on elementary and secondary education per pupil, and retention rate to Grade 11, is shown in Figure 2-14. In this figure the retention rates of the two cohort studies are plotted against expenditures for 1956 and 1962. A very high association is shown. In Figure 2-15 median salaries of teachers are plotted against retention rates, showing a still higher correlation with the results of the two studies. By plotting the results from two studies in this manner, comparisons can be made on a longitudinal basis for each province. It is clearly apparent that expenditures on education, particularly as expressed in teacher salaries, correlate very highly with retention rate. Teacher salaries, as has been pointed out, reflect both differences in qualifications and scale differences among provinces. It is difficult to compare teacher qualifications using only a single measure; however, in Figure 2-16 retention rates from the two studies are plotted against the per cent of teachers with minimal training qualifications. Again a correlation results.

It is well known that association does not necessarily imply causation. There appears to be little doubt, however, that improvement in teacher qualifications is an important factor in the improvement of retention rates. A high correlation is also found between retardation rates and expenditures on

FIGURE 2-14
Association of Expenditure Per Pupil with Retention

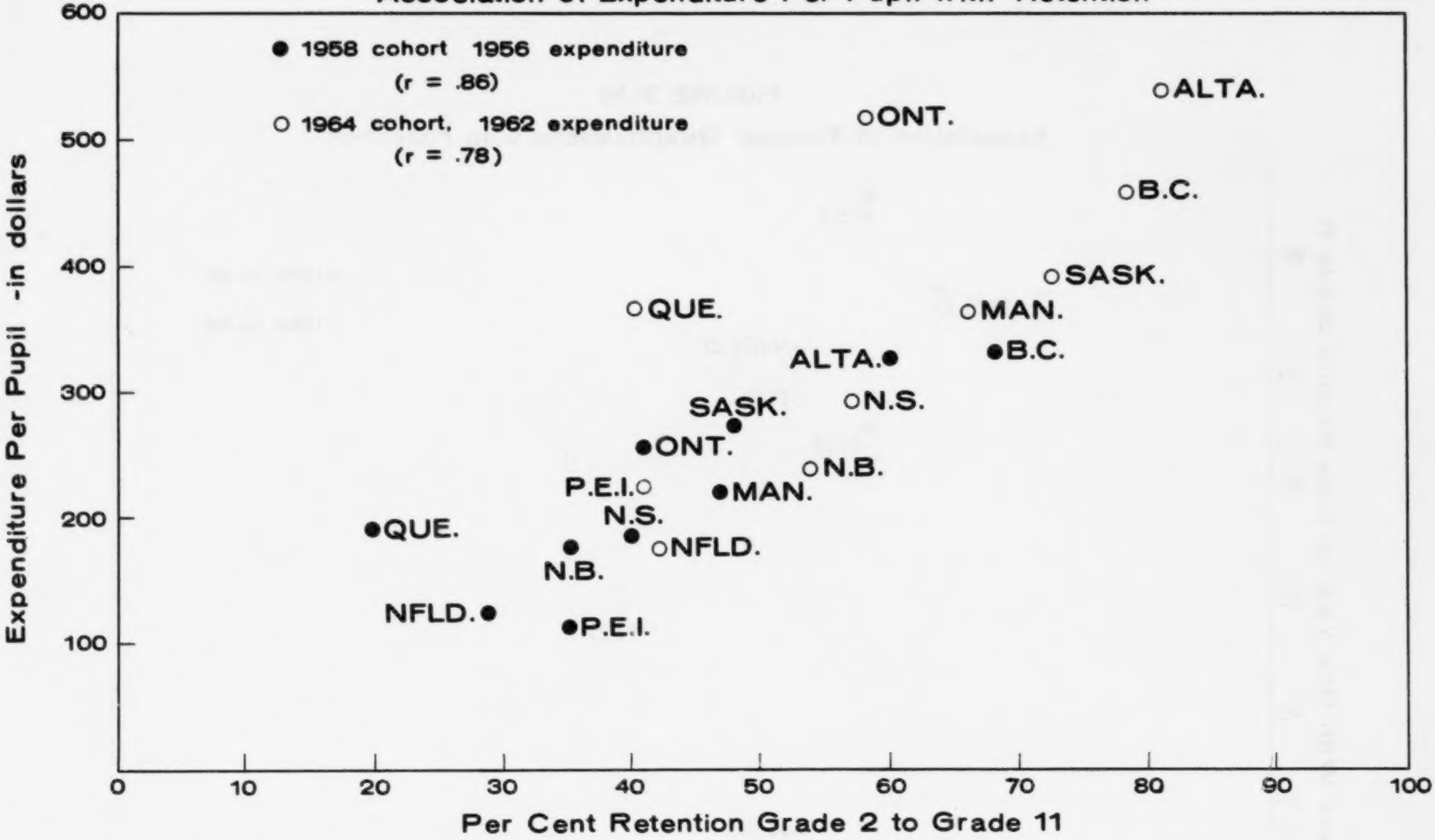


FIGURE 2-15
Association of Teachers' Salaries with Retention

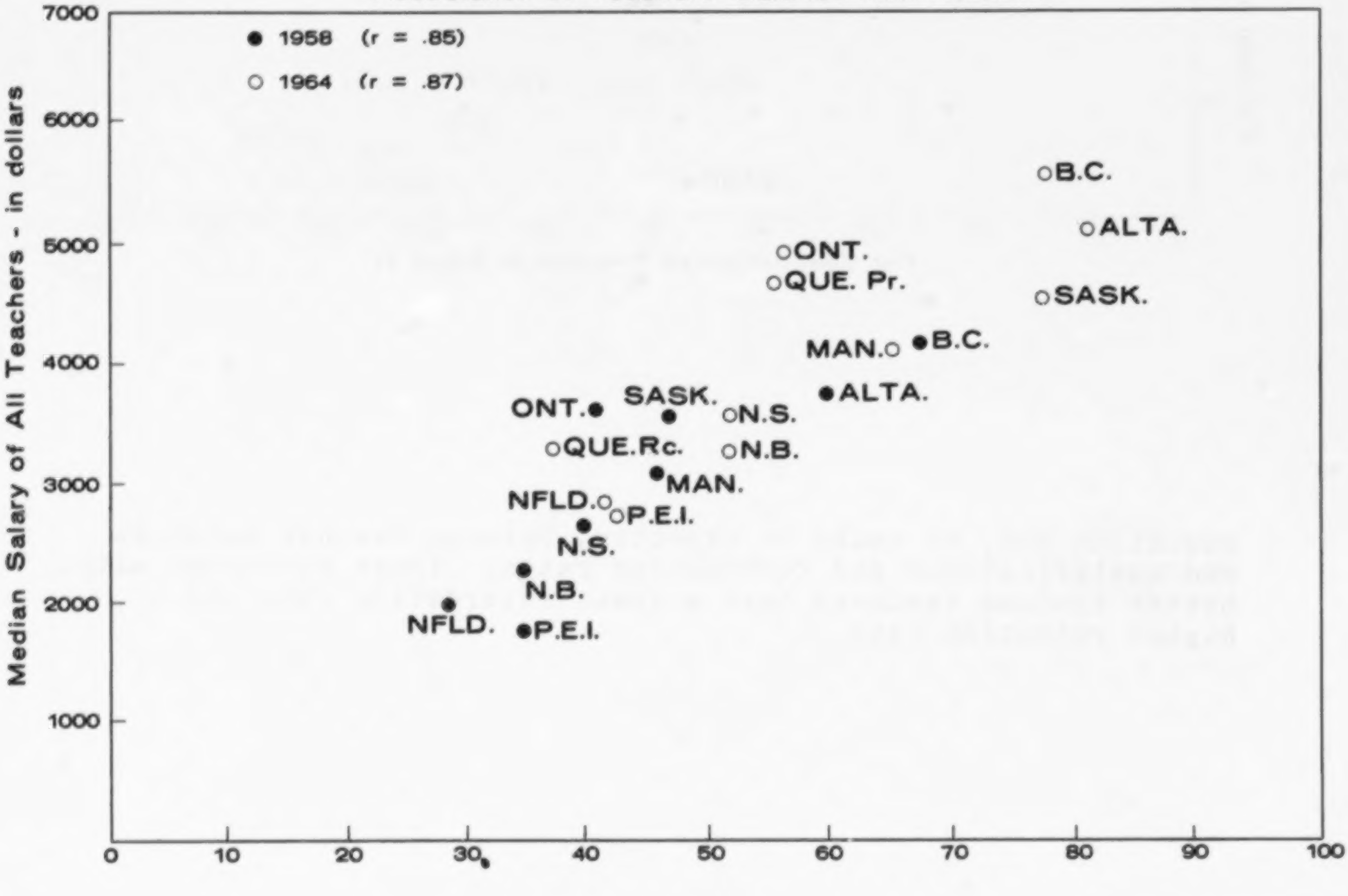
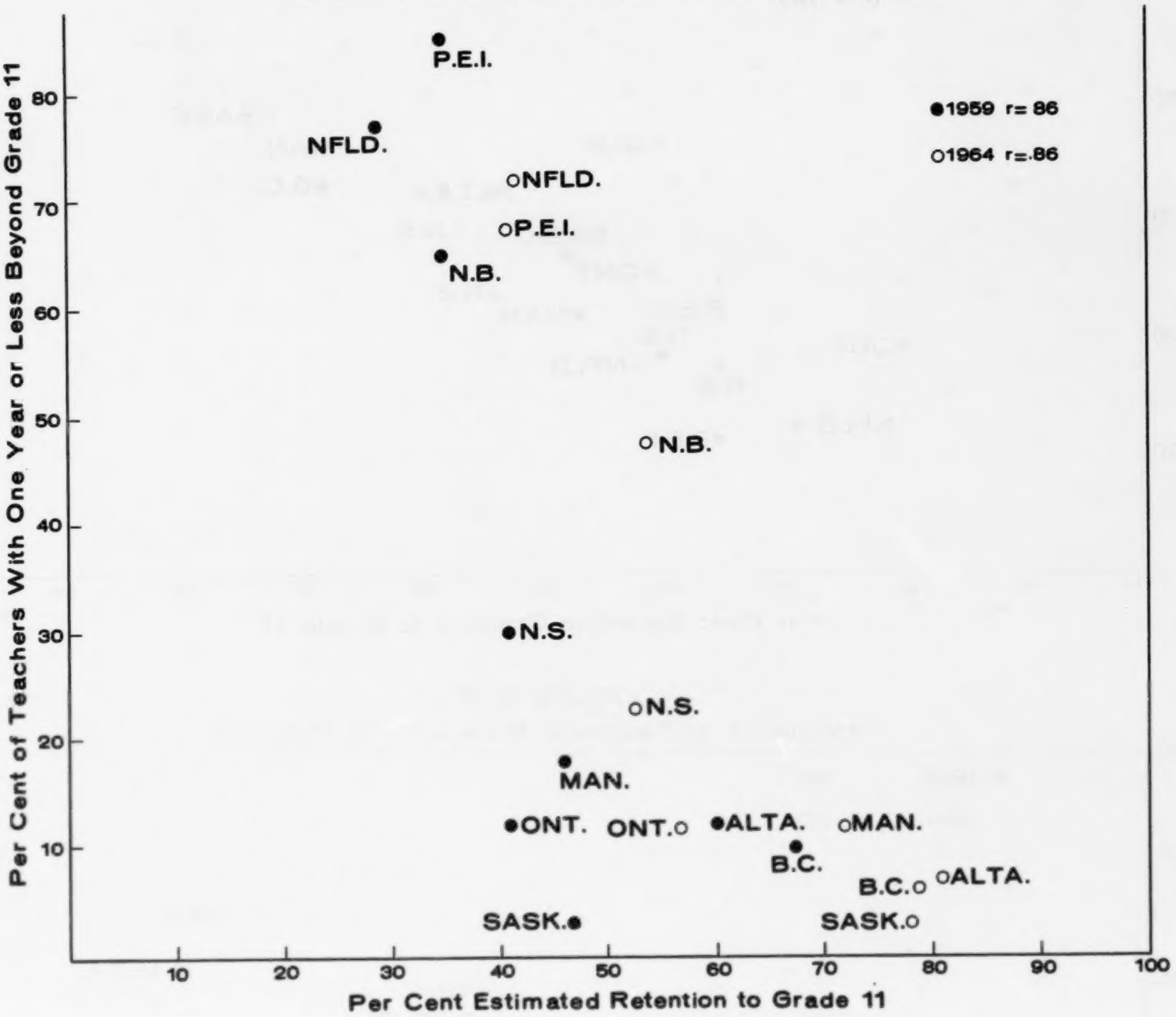


FIGURE 2-16
Association of Teacher Qualifications with Retention



education and, as would be expected, between teacher salaries and qualifications and retardation rates. Those provinces with better trained teachers have a lower retardation rate and a higher retention rate.

4. SUMMARY

In this section the findings relative to the inputs and outputs of the educational systems of the Atlantic and Western Regions of Canada are outlined in summary form.

Pupil Population

In the Atlantic Region the Percentage Increase in Population from 1956-1966 was Approximately Half that of the Western Region.

The Atlantic Region experienced a total population increase of approximately 12 per cent during the 1956-1966 decade, compared with an increase of about 24 per cent for the Western Region. Within the Atlantic Region, Newfoundland experienced the highest rate of increase: 19 per cent, and Nova Scotia the lowest: 9 per cent. The percentage increases for New Brunswick and Prince Edward Island were 11 and 9 per cent, respectively.

Educational "Need" is Greater in the Atlantic Provinces than in the Western Provinces.

Educational "need", defined as the ratio of the weighted school-age group (5-19) to the working-age group (20-64), is greater for the Atlantic Region than for the Western Region. In 1965 the ratio for the Atlantic Region was .88 and for the Western .71. This represented an increase from the 1961 Census of .15 for the Atlantic and .15 for the Western Region. Within the Atlantic Region, there was a range from .79 for Nova Scotia to 1.02 for Newfoundland.

The average number of children per family in 1961 was 2.24 in the Atlantic Region, 1.74 in the Western. Within the two regions Newfoundland had the highest average (2.67), New Brunswick the second highest (2.28), and British Columbia the lowest (1.59).

The Atlantic Region Experienced a One-Third Increase in Total School Population During the Decade 1956-1966.

The increase in total school population for the Atlantic Region from 1956 to 1966 was 32 per cent, for the Western Region it was 53 per cent. The range in the Atlantic Region was from 27 per cent in Nova Scotia to 42 per cent in Newfoundland. New Brunswick and Prince Edward Island each had an increase of about 30 per cent.

In 1956, 23 per cent of the total population of the Atlantic Region was enrolled in elementary or secondary schools. By 1966 the percentage had increased to 27 per cent. In the Western Region the percentage of the population in school in 1956 was 19 per cent; in 1966, 23 per cent.

Secondary School Enrolments Doubled in the 1956-1966 Decade.

By far, the largest enrolment increases were in the secondary schools (Grades 9-12). New Brunswick experienced an increase of 168 per cent and Newfoundland an increase of 106 per cent. The increase for Prince Edward Island was 79 per cent and for Nova Scotia 76 per cent. The percentage increase in secondary school enrolments for the Atlantic Region during the 1956-1966 decade was 93 per cent. The Western Region experienced an increase of 96 per cent during the same period, all provinces but Saskatchewan having increases of over 100 per cent.

The highest secondary school enrolment increase relative to the elementary enrolment increase during the decade was in New Brunswick. Elementary school enrolments increased only 18 per cent whereas secondary enrolments increased 168 per cent. For the Atlantic Region as a whole, elementary school enrolments increased by 22 per cent.

Expenditure Patterns

Total Expenditures on Elementary and Secondary Education in the Atlantic Region Increased by 68 per cent on a Per-Capita Basis, or 50 per cent on a Per-Pupil Basis, During the Six-Year Period from 1959 to 1965.

During this period the percentage increase in total expenditures, on a per-capita basis, was 68 per cent for the Atlantic Region, 62 per cent for the Western. The greatest percentage increase occurred in Prince Edward Island - 113 per cent. On a per-pupil-in-average-daily-attendance basis, the percentage increase was 50 per cent for the Atlantic Region, 36 per cent for the Western. Prince Edward Island had an increase on this basis of 78 per cent, Nova Scotia 44 per cent, New Brunswick 41 per cent, and Newfoundland 42 per cent.

Expenditure Levels on Elementary and Secondary Education in the Atlantic Region were 40 per cent Below those of the Western Region on a Per-Capita Basis, and 45 per cent Below on a Per-Pupil Basis in 1965.

Although the Atlantic Provinces had higher percentage increases in expenditures than the Western Provinces during the 1959-1965 period, a large dollar gap in expenditures persisted. In 1959 the differential was $30 per capita, $194 per pupil. In 1965 it was $46 per capita, $237 per pupil. In the latter year, per-capita expenditures for the Atlantic Provinces averaged $69, for the Western Provinces $115. Per-pupil expenditures averaged $286 for the Atlantic Provinces, $523 for the Western Provinces.

The Range of Expenditures among Individual Provinces within the Two Regions Continues to be very Wide.

Nova Scotia, the highest expenditure province in the Atlantic Region, had per-capita expenditures 47 per cent, or $21, higher than Newfoundland - the lowest-expenditure province. Per-pupil expenditures in Nova Scotia were 55 per cent, or $118 higher than in Newfoundland. Alberta's per-capita expenditures were 118 per cent, or $67, higher than those of Newfoundland; 55 per cent, or $44, higher than those of Nova Scotia. On a per-pupil basis the differential between British Columbia and Newfoundland in 1965 was 169 per cent, or $320, and between British Columbia and Nova Scotia 74 per cent, or $247.

From 1956 to 1965 the dollar gap between Newfoundland and Nova Scotia, on a per-pupil basis, increased from $51 in 1956 to $56 in 1959, to $80 in 1962, and to $118 in 1965. Between Nova Scotia and British Columbia the differential was $160 in 1956, $187 in 1959, $161 in 1962, and $247 in 1965.

In 1967 Capital Expenditures Accounted for Approximately 14 per cent of Total School Board Expenditures in the Atlantic Region; Teacher Salaries, Approximately 64 per cent.

In the Western Provinces teacher salaries accounted for 57 per cent of total expenditures. The range for the two regions was from 53 per cent in Saskatchewan to 65 per cent in Newfoundland.

As a percentage of operating costs salaries accounted for 74 per cent in the Atlantic Region, 67 per cent in the Western Region. The range was from 64 per cent in Saskatchewan to 75 in Newfoundland.

Median Salaries of Both Elementary and Secondary Teachers in the Atlantic Region are Below the Canadian Median.

In 1966-67 the median salaries of Canadian elementary teachers ranged from $3,315 in Newfoundland to $6,020 in British Columbia. Nova Scotia, with a median of $3,954 - the highest among the Atlantic Provinces - was $639 above the Newfoundland median. The greatest difference was found in the case of male elementary teachers for whom the median in Newfoundland was $3,380, in British Columbia $6,717, a difference of $3,337 or nearly 100 per cent.

The median for secondary teachers in 1966-67 ranged from $4,706 in Prince Edward Island to $7,819 in British Columbia. Nova Scotia had a median of $6,026 for secondary teachers - $1,320 above the median for Prince Edward Island.

Salary scales incorporate two major dimensions: levels of training and years of experience. In some instances length of tenure with the employing school board may influence placement in terms of years of experience.

Between the average salaries of beginning elementary teachers with lower levels of training (1-3 years beyond junior matriculation) a differential of approximately $800 existed in 1966-67 between the Atlantic and Western Regions. For beginning elementary teachers with 4-7 years training the differential was approximately $675. For elementary teachers with 4-9 years of experience the differential between regions was approximately $1,050 at the lower levels of training and $950 at upper levels.

At the secondary level the average salary of beginning teachers with lower levels of training was approximately $3,500 for the Atlantic Region and $4,200 for the Western. For beginning secondary teachers with upper levels of training a similar differential existed. For experienced teachers the differential rose to about $1,400 for lower levels of training and $1,200 for higher levels.

Teacher Qualifications

In Addition to Salary Scale Differences, Expenditures on Teacher Salaries Reflect Differences in Qualifications.

Three aspects of teacher qualifications were examined: levels of training, years of experience, and tenure with the same school board. It may be hypothesized that there is a relationship between the effectiveness of teachers generally and the training they have received; the experience they have gained; and the period of time they have worked for a particular school system.

The Percentage of Teachers with Degrees, at Both the Elementary and Secondary Levels, is Considerably Lower for the Atlantic Region than for the Western Region.

In 1966-67, 23 per cent of all teachers in the Atlantic Region held a university degree compared with 38 per cent for the Western Region. Of the elementary teachers, 10 per cent held degrees in the Atlantic Region, 18 per cent in the Western Region. The range extended from 3 per cent in Prince Edward Island to 25 per cent in British Columbia. The percentage for Nova Scotia was 16, for New Brunswick 8, and for Newfoundland 6.

Of the secondary teachers in the Atlantic Region, 55 per cent held university degrees in 1966-67 compared with 70 per cent in the Western Region. The range extended from 46 per cent in Newfoundland to 75 in British Columbia. In Nova Scotia the percentage was 65.

From 1961 to 1967 the percentage point increase in teachers with degrees was 6.9 for the Atlantic Region, 11.4 for the Western. The range extended from Newfoundland, with an increase of 4.6, to Alberta with an increase of 13.8 percentage points.

Half the Elementary Teachers in the Atlantic Provinces had One Year or less of Training Beyond Junior Matriculation.

In 1966-67, 48 per cent of the elementary teachers in the four Atlantic Provinces had one year or less of training beyond junior matriculation. In the four Western Provinces only 9 per cent of the elementary teachers were reported in this category. The range extended from 4 per cent in Saskatchewan to 78 per cent in Newfoundland. In Prince Edward Island the percentage was 70, in New Brunswick 44, in Nova Scotia 25.

More than One Quarter of the Secondary Teachers in the Atlantic Provinces had Two Years or less of Training Beyond Junior Matriculation.

Of the secondary teachers in the Atlantic Region, 29 per cent had two years or less of training beyond junior matriculation in 1966-67. The percentage in the category for the Western Region was 14. The range extended from 7 per cent in Saskatchewan to 40 in New Brunswick. For Prince Edward Island the percentage was 36, for Newfoundland 38 and for Nova Scotia 13.

The Median Experience of Elementary Teachers in the Atlantic Provinces is Generally above the Median for all Canadian Teachers Except in the Case of Newfoundland.

In 1966-67 the median experience of elementary teachers in Nova Scotia was 10 years : 9 months, in New Brunswick 8:5 and in Prince Edward Island 8:7, and in Newfoundland 3:8. This represented an increase of about one year over the 1960-61 figures in three of the provinces, and three years in the case of Prince Edward Island, suggesting a general improvement in teacher retention. Nova Scotia had the highest median of the eight provinces, Newfoundland the lowest.

In Canada generally, and in the Atlantic Provinces in particular, there was a decrease in the median years of experience of secondary teachers from 1961 to 1967. The Atlantic median dropped by about 3:0, the Western by about 2:4. In Newfoundland the median dropped from 9:8 in 1961 to 7:0 in 1967, and in Prince Edward Island from 12:1 to 6:1. Nova Scotia had a decrease from 10:2 to 8:6, while New Brunswick dropped from 8:5 to 7:1.

The Median Tenure of Both Elementary and Secondary Teachers was Above the Canadian Median in Two of the Atlantic Provinces and Below the Median in Two Others.

Tenure is defined as years of experience in the same school district. In 1966-67 Nova Scotia had a median of 5:2 for elementary teachers, 3:5 for secondary. In New Brunswick the median tenure for elementary teachers was 3:7, for secondary teachers 3:2. Newfoundland, however, had a median of only 1:6 for elementary teachers and of 2:2 for secondary teachers. Prince Edward Island had a median for both elementary and secondary teachers of 2:2.

In the Atlantic Region Teacher Tenure is Generally Somewhat Lower for Secondary Teachers than for Elementary Teachers.

Except in Newfoundland the median tenure of secondary teachers in the Atlantic Provinces is a few months lower than for elementary teachers. The reverse is true in the Western Provinces.

School Organization

The Number of School Districts and Boards is Being Reduced in all Atlantic Provinces.

From 1960 to 1966 the number of operating school boards was reduced by 12 per cent in Newfoundland, by 20 per cent in Prince Edward Island, by 21 per cent in Nova Scotia, and by 28 per cent in New Brunswick. Plans are currently under consideration in all provinces for the reorganization of existing school sections or districts into larger units.

Although the Number of Schools in Operation has Decreased Since 1961 Many Small Schools Continue in Operation in all Atlantic Provinces.

In 1966 the average school size for the Atlantic Provinces was six teachers with 158 pupils. The average for the Western Provinces was 10 teachers with 250 pupils. The average number of pupils per classroom in each region was about 25.

Between 1960 and 1966 there was a decrease in number of operating schools of 6 per cent in Newfoundland, 15 per cent in Prince Edward Island, 34 per cent in Nova Scotia and 29 per cent in New Brunswick.

An Estimated $145 Million would be Required for Minimum Centralization of Schools.

If all schools of less than six rooms were to be replaced with classrooms in centralized schools, with an average enrolment of

20 pupils, it would be necessary to build 1,150 classrooms in Nova Scotia and 2,764 in Newfoundland. This would be the equivalent of 77 fifteen-room schools in Nova Scotia and 184 fifteen-room schools in Newfoundland. Using an estimate of $20,000 per classroom, this building program would represent a cost of $23 million for Nova Scotia and $55 million for Newfoundland. On the basis of preliminary plans of departments of education another $55 million would be required in New Brunswick and $12 million in Prince Edward Island.

Average Classroom Size is Similar in the Atlantic and Western Regions.

The average classroom size for the Atlantic Region in 1966 was 25.2 pupils and for the Western Region 24.9 pupils. The range in the Atlantic Region was from 23.0 in Prince Edward Island to 26.3 in Newfoundland. The range for the Western Region was from 23.5 in Alberta to 26.7 in British Columbia.

Pupil Retention

The Proportion of the 15-19 Age Group in School for the Atlantic Provinces was about 10 Percentage Points Lower than that of the Western Provinces in 1961.

At the time of the 1961 Census the percentage of 15-19 year old males in school in the Atlantic Provinces ranged from 52 per cent for Newfoundland to 57 per cent for Nova Scotia. The range for the Western Provinces was from 62 per cent for Manitoba to 69 per cent for British Columbia. For females the Atlantic Provinces had a range from 52 per cent in Newfoundland to 57 per cent in Nova Scotia, and the Western Provinces had a range from 62 per cent in Manitoba to 68 per cent in British Columbia.

Pupil Retention Rates in the Atlantic Provinces, Particularly for Boys, are much Lower than in the Western Provinces.

A 1965 study by the Dominion Bureau of Statistics revealed that pupil retention rates, particularly for boys, were about 30 percentage points lower in the Atlantic Provinces than in the Western Provinces. The retention of boys from Grade 2 to Grade 11 was reported to be 38 per cent for Prince Edward Island, 43 per cent for Newfoundland, 46 per cent for Nova Scotia and 50 per cent for New Brunswick. For the Western Provinces the percentages were: Manitoba 72, Saskatchewan 74, Alberta 80 and British Columbia 78. Retention rates to Grade 11 for girls in the Atlantic Provinces ranged from 40 per cent for Newfoundland to 60 per cent for Nova Scotia. In the Western Provinces the range for girls was from 71 per cent in Manitoba to 82 per cent in Alberta.

The Rate of Improvement in Retention was much Less in the Atlantic Provinces than in the Western Provinces over a Five-Year Period.

In an earlier study, reported in 1960, the retention rates to Grade 11 in the Atlantic Provinces were 29 per cent for Newfoundland, 35 per cent for Prince Edward Island and New Brunswick, and 40 per cent for Nova Scotia. At that time the retention rates in the Western Provinces ranged from 46 per cent in Manitoba to 68 per cent in British Columbia.

If boys' retention rates in the 1965 report are compared with the general estimate for both boys and girls in the earlier report, the percentage point increases in retention rates during the five-year period would be as follows: Newfoundland 14, Prince Edward Island 3, Nova Scotia 6, and New Brunswick 15. For the Western Provinces the increases were: Manitoba 26, Saskatchewan 27, Alberta 20 and British Columbia 10.

Pupil Retardation Rates

Retardation Rates in the Atlantic Region at Age 15 are Double those of the Western Region.

In 1965, 30 per cent of the 15-year-old pupils in schools of the Atlantic Provinces were one or more years over-age in grade. The percentage of 15-year-olds in this category in the Western Region was 15.

It is a general fact that the retardation rates of boys in all Canadian Provinces are much higher than for girls. In the Atlantic Provinces the rates for 15-year-old boys in 1965 were: Newfoundland 41 per cent, Prince Edward Island 33 per cent, Nova Scotia 36 per cent and New Brunswick 35 per cent. The range for boys in the four Western Provinces was from 12 per cent in Alberta to 26 per cent in British Columbia. Retardation rates for girls in the Western Provinces ranged from 7 per cent in Alberta to 16 per cent in British Columbia. In the Atlantic Provinces the rates for girls at age 15 were: 29 per cent for Newfoundland, 20 per cent for Prince Edward Island, 23 per cent for Nova Scotia and 20 per cent for New Brunswick.

A High Percentage of Failures are More than One Year Over-Age in Grade.

Almost half of the pupils who were over-age in Grade 7 were two or more years behind pupils of their own age group. A relatively higher percentage of the over-age boys than girls were in this group.

Association Between Inputs and Outputs

Expenditure on Education, Teacher Salaries and Teacher Qualifications have a Positive Association with School Retention Rates.

There is a high association between expenditures on education and pupil retention rates, and therefore a significant implied relationship between personal income and education output as measured by retention rates. There is a negative association between expenditures on education and retardation rates, as there is between retention rates and retardation rates.

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PART THREE

POST-SECONDARY EDUCATION

1. POST-SECONDARY INSTITUTIONS

Description and Distribution

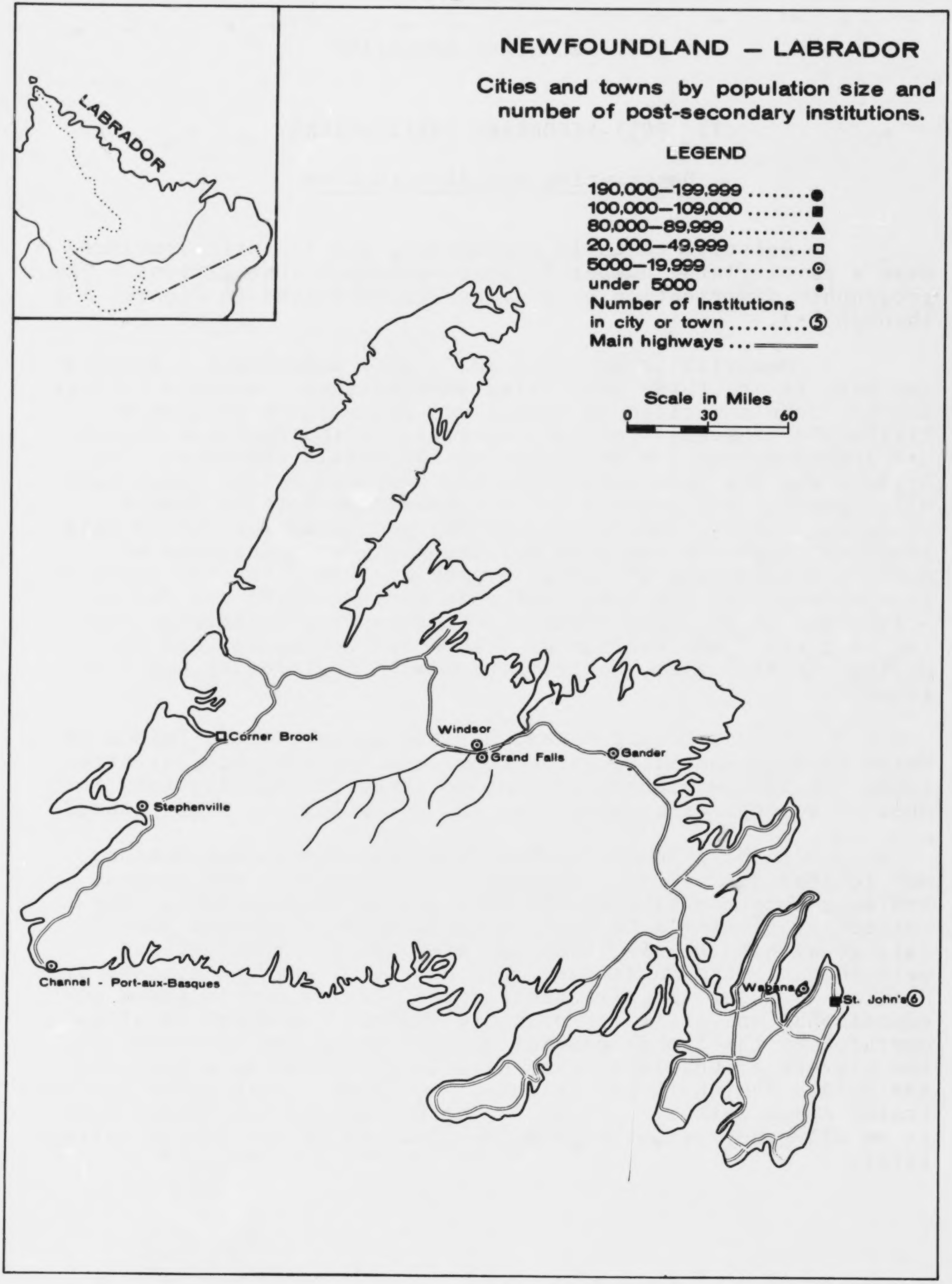
Relative to their population, the Atlantic Provinces have a fairly large number of post-secondary institutions. Their geographic distribution by province is indicated in Figures 3-1 through 3-4.

Memorial is Newfoundland's only university. Associated with it are three affiliated institutions: Queen's College and St. John's College on campus and St. Bride's College at Littledale. Queen's College, operated by the Anglican Church has accommodation for 160 male and 105 female students. St. Bride's and St. John's Colleges are operated by the Roman Catholic Church. St. Bride's has accommodation for 200 female students, and St. John's College has accommodation for 50 male students. Men are educated for the Anglican priesthood at Queen's College and St. Bride's provides the first two years of teacher training for Roman Catholic girls. There are two institutions at St. John's where post-secondary technician training is given - the College of Trades and Technology and the College of Fisheries, Navigation, Marine Engineering and Electronics.

Prince Edward Island has two universities, Prince of Wales College and St. Dunstan's University, both at Charlottetown. It is now planned to combine these two institutions into one. A college of applied arts and technology is also planned.

In Nova Scotia several post-secondary institutions are located at Halifax. Dalhousie University is the largest and most comprehensive of the Nova Scotia universities. The University of King's College, affiliated as a liberal arts college with Dalhousie, also educates men for the Anglican priesthood in the Maritimes. St. Mary's of the archdiocese of Halifax is under the direction of the Jesuits and is now a co-educational university. Mount St. Vincent for women is also operated by the archdiocese of Halifax under the direction of the Sisters of Charity. Pine Hill is the divinity school for the United Shurch in the Atlantic Provinces. Holy Heart Seminary trains Roman Catholic priests. The Convent of the Sacred Heart is an all-grade school with a few students at the junior college level.

Figure 3-1

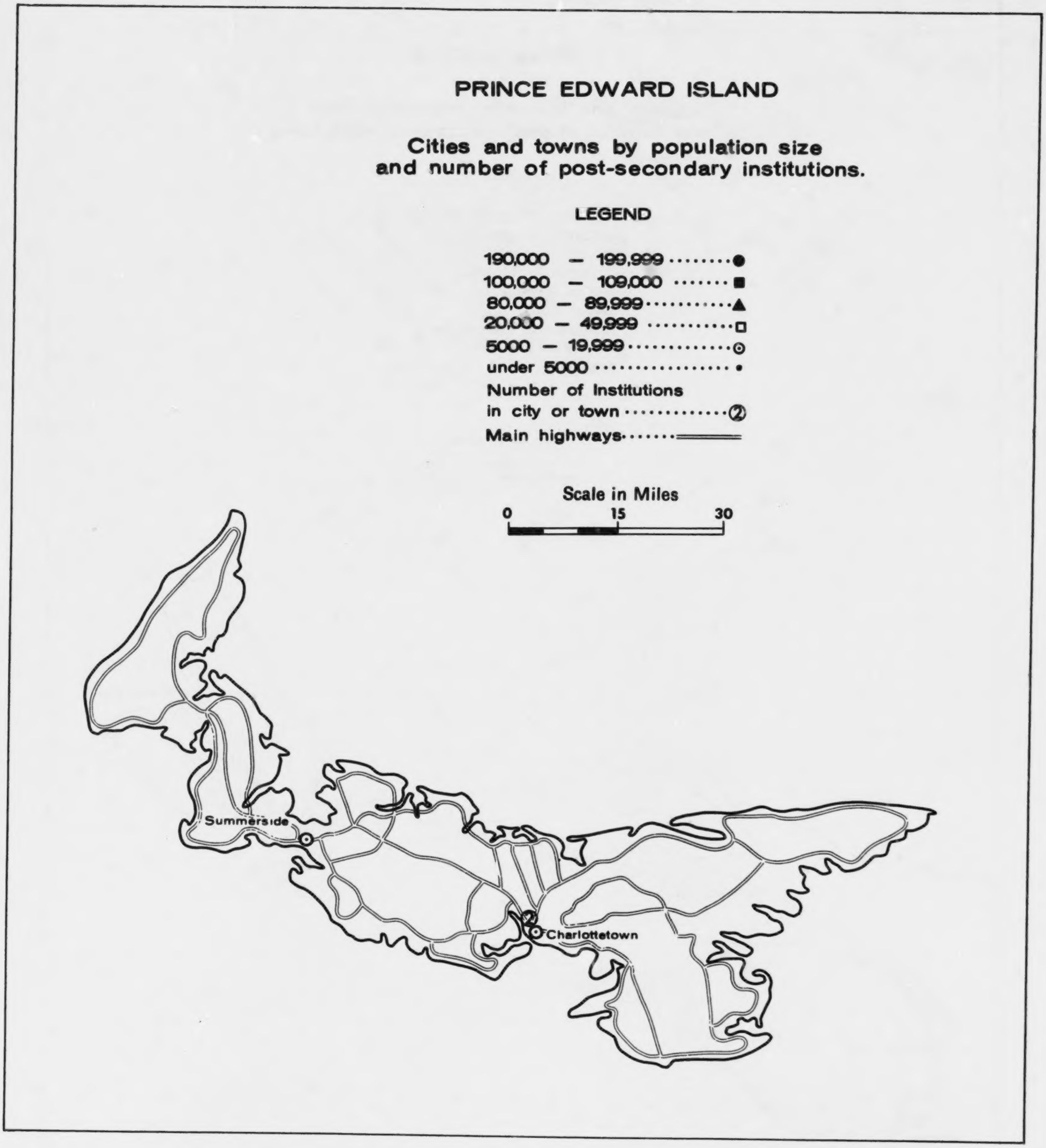


NEWFOUNDLAND — LABRADOR

Cities and towns by population size and number of post-secondary institutions.

LABRADOR
LEGEND
190,000—199,999 ....●
100,000—109,000 ....■
80,000—89,999 ....▲
20,000—49,999 ....□
5000—19,999 ....⊙
under 5000 •
Number of Institutions in city or town ....⑤
Main highways ... ═
Scale in Miles
0
30
60
Corner Brook
Windsor
Grand Falls
Gander
Stephenville
Channel - Port-aux-Basques
Wabana
St. John's
6

Figure 3-2

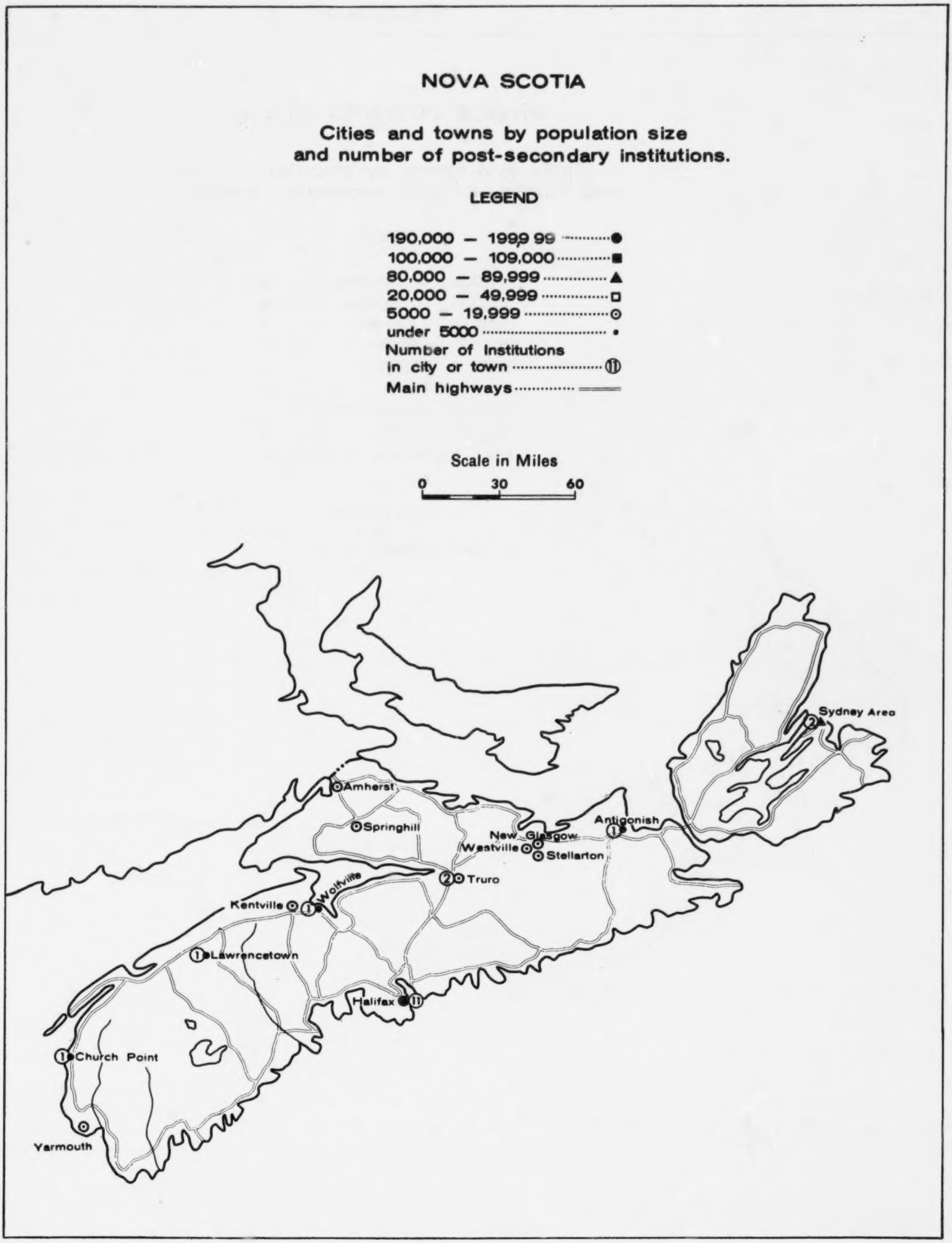


PRINCE EDWARD ISLAND

Cities and towns by population size and number of post-secondary institutions.

LEGEND
190,000 — 199,999 ········●
100,000 — 109,000 ·······■
80,000 — 89,999 ···········▲
20,000 — 49,999 ···········□
5000 — 19,999 ·············⊙
under 5000 ·················•
Number of Institutions in city or town ·············②
Main highways·······═══
Scale in Miles
0
15
30
Summerside
Charlottetown

Figure 3-3



NOVA SCOTIA

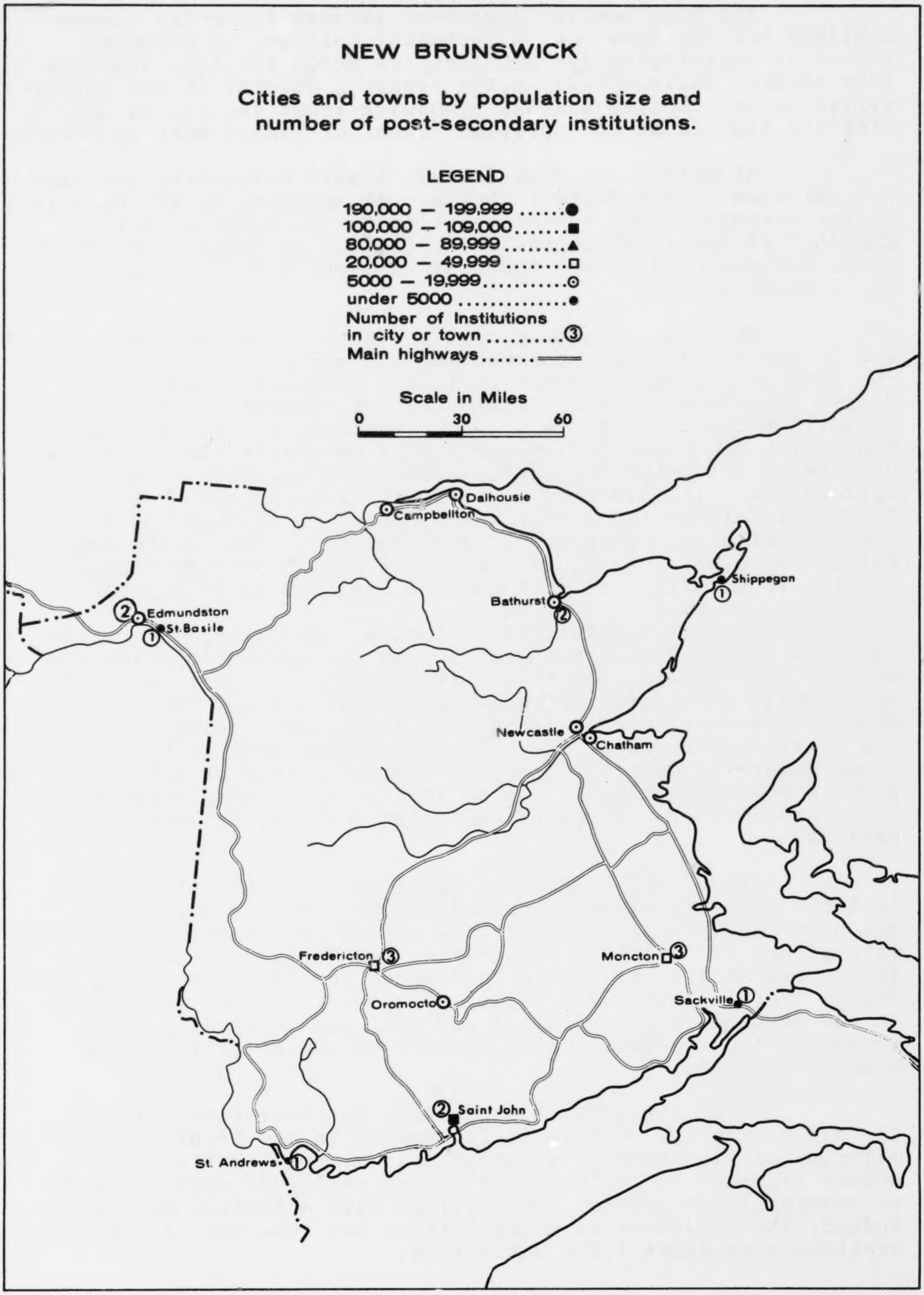
Cities and towns by population size and number of post-secondary institutions.

LEGEND

190,000 — 1999 99 .... ●
100,000 — 109,000 .... ■
80,000 — 89,999 .... ▲
20,000 — 49,999 .... □
5000 — 19,999 .... ⊙
under 5000 .... •
Number of Institutions in city or town .... ⑪
Main highways .... ═

Scale in Miles
0
30
60
Sydney Area
②
Amherst
Springhill
Antigonish
①
New Glasgow
Westville
Stellarton
②
Truro
Wolfville
①
Kentville
①
Lawrencetown
Halifax
⑪
①
Church Point
Yarmouth

Figure 3-4


NEW BRUNSWICK
Cities and towns by population size and number of post-secondary institutions.
LEGEND
190,000 — 199,999 ......●
100,000 — 109,000.......■
80,000 — 89,999........▲
20,000 — 49,999........□
5000 — 19,999...........⊙
under 5000..............•
Number of Institutions in city or town..........③
Main highways.......═
Scale in Miles
0
30
60
Dalhousie
Campbellton
Shippegan
①
Bathurst
②
②
Edmundston
St.Basile
①
Newcastle
Chatham
Fredericton
③
Moncton
③
Sackville
①
Oromocto
②
Saint John
St. Andrews
①

The Nova Scotia Government assumes financial responsibility for the Nova Scotia Technical College, an advanced school of engineering and architecture which receives students from several universities in the region. Several of the universities in Nova Scotia and New Brunswick grant degrees to specialists trained at the Maritime School of Social Work in Halifax.

At Wolfville, Nova Scotia, Acadia University has historical ties to the Baptist Church. At Antigonish, St. Francis Xavier University has historical ties to the Roman Catholic Church. It has established Xavier College at Sydney, and Mount Saint Bernard College for women at Antigonish is affiliated to St. Francis Xavier.

At Truro, the Nova Scotia Teachers' College is operated by the provincial Department of Education. Also at Truro, the Nova Scotia Agricultural College - operated by the Nova Scotia Department of Agriculture - draws students from the four Atlantic Provinces. It is a junior college, and it has arrangements with Macdonald College of McGill University and with the University of Guelph for continuation to a bachelor's degree in agriculture. Its students may also continue at the Nova Scotia Technical College for a bachelor's degree in engineering (with specialization in Agricultural Engineering). The Agricultural College also offers a broad program of post-secondary studies leading to technicians' diplomas and diplomas of technology.

At Church Point, Digby county, the Collège Ste. Anne, operated by the Eudist Fathers, serves the French population of western Nova Scotia. There are two technical institutes, the Nova Scotia Institute of Technology at Halifax and the Eastern Nova Scotia Institute of Technology at Sydney. Technician training is also provided at the Land Survey Institute in Lawrencetown, Annapolis county. The Nova Scotia College of Art, which gives a four-year diploma course in fine arts among other subjects and is currently planning degree courses, is located in Halifax.

Since 1962 university development in New Brunswick, in terms of professional, specialized and post-graduate work, has been increasingly concentrated at two locations: the University of New Brunswick in Fredericton for English-speaking students, and at the Université de Moncton for French-speaking students. For 1967-68, 72 per cent of total full-time enrolments in the province's universities and colleges (including affiliates and the teachers' college) were on the Fredericton and Moncton campuses.

Mount Allison, at Sackville, has historical ties to the United Church. Though it is located in New Brunswick, the majority of its students are residents of Nova Scotia. For a number of years it has followed a firm policy of developing as an undergraduate liberal arts college with a limited enrolment. Indeed, the enrolment at Mount Allison has remained virtually stationary at about 1,250 since 1961.

St. Thomas University has been moved from Chatham to the University of New Brunswick campus in Fredericton, where it provides, through its agreement with the University, courses in the liberal arts and in education, for both men and women. In addition, the University of New Brunswick has established a branch in Saint John which currently is limited to offering the first two years of certain undergraduate degree programs. Together these institutions are intended to meet the needs of the province's English-speaking population.

Since 1967, the Université de Moncton has been owned and administered by a lay board of governors of 21 members. The Université has three main affiliated colleges. Collège St. Joseph on the Moncton campus is operated by the Holy Cross Fathers; the Collège de Bathurst and the Collège St. Louis in Edmundston are both operated by the Eudist Fathers. The latter two themselves have small affiliated institutions for women students, operated by nuns. Affiliated to the Collège de Bathurst is the Collège Jésus-Marie at Shippegan, and affiliated to the Collège St. Louis is the Collège Maillet at St. Basile. By agreement, the activities of all the affiliated colleges have been confined to basic undergraduate education in arts and to certain teacher-training courses. The pattern of their future development is currently the subject of careful study.

New Brunswick has two teachers' colleges operated by the Department of Education. One is on the campus of the University of New Brunswick in Fredericton. The other opened in the autumn of 1968 on the campus of the Université de Moncton. Post-secondary technician training is provided at the New Brunswick Institute of Technology in Moncton and in the Saint John Technical and Trade Institute. Teachers of vocational education from all four Atlantic Provinces are trained at the New Brunswick Institute of Technology.

Co-operation Among Institutions

Concerning the early history of co-operation among institutions in the region, Mitchener (1961) wrote: "The now defunct University of Halifax was chartered, as was Manitoba initially, as an examining institution on the pattern of the University of London. It granted seven earned degrees from 1878 to 1880 to students studying at other institutions, but ceased operation without giving any course work itself". The University of Halifax was an attempt to partially unite existing institutions (King's, Dalhousie, Acadia, St. Mary's, St. Francis Xavier, and Mount Allison) but seems to have failed because its predecessors were too firmly established as independent entities.

The second serious attempt to achieve co-ordination among Nova Scotia colleges was proposed in a report by the Carnegie Foundation for the Advancement of Teaching (1922). This report suggested a form of confederation centred in a new university, with the existing universities becoming affiliated colleges. Its authors apparently had not heard of the Halifax attempt. Following the Carnegie report, the Foundation earmarked $3 million for the development of a centralized educational scheme at Halifax. King's College, which had burned in 1920, agreed to terms of association with Dalhousie in 1923. An account of this is contained in Vroom (1941).

To serve as a buffer between governments and post-secondary institutions, some Canadian provinces have established commissions. These commissions normally have provincially appointed or approved members representing government, education, and community interests. Their terms of reference are, in general, to advise the government on development of provincial university, or post-secondary, resources; to advise on and sometimes to distribute financial assistance required; and to plan, together with the institutions, the implementation of programs to meet the expanding education needs of the province.

Newfoundland, with a single university, has not yet found need for a separately constituted advisory board. However, the recent report of the Newfoundland Royal Commission on Education and Youth (under the chairmanship of Dr. Philip Warren) suggested a system of regional colleges throughout the province, a development which could point the way to such a need.

Prince Edward Island has two universities, but if proposed legislation is adopted, will soon have one. A bill to establish a university grants commission was introduced early in 1968 but was withdrawn in favour of one to establish a commission on post-secondary education. The government has indicated its intention to combine the two universities, and to establish a college of applied arts and technology.

Nova Scotia established an advisory University Grants Committee in 1963, charged with inquiring into the financial support of Nova Scotia universities and some other post-secondary institutions, as well as of institutions outside the province which serve substantial numbers of Nova Scotia students. It was also asked to study curriculum offered, standards required, and facilities for pursuing the courses offered; to study ways of avoiding duplication of courses and facilities; to study possible areas of co-operation among institutions; and to advise on distribution of provincial funds. The committee issues annual reports embodying recommendations to the government and the institutions. The 1967 report indicates that its financial recommendations to the province have been acted on more readily than some of its recommendations to institutions. Recently, at the request of the Nova Scotia University Grants Committee, there was a meeting among officials of several post-secondary Halifax institutions - Dalhousie, King's, the Maritime School of Social Work, Mount St. Vincent, the Nova Scotia College of Art, the Nova Scotia Technical College and St. Mary's University. Matters pertaining to co-operation were discussed, and a coordinating committee was set up under Dr. Arthur Murphy, Chairman of the Grants Committee. Subcommittees were formed to work out the details of affiliations and co-operative efforts among these institutions.

In New Brunswick, following publication of a report in 1967 by a committee on financing higher education chaired by Dr. John J. Deutsch, a commission on post-secondary education was formed. The commission includes a chairman (J.F. O'Sullivan) and eight other members from the education, business, professional and labour fields. The name was subsequently changed to the New Brunswick Higher Education Commission. Its objects and purposes are to advise the government on the needs and appropriate patterns of future development (including finance and student aid) of all forms of post-secondary education, and to undertake development planning with the institutions. It is also responsible for allocation of government operating and capital grants.

There is an association among universities and colleges in the Atlantic Provinces known as the Association of Atlantic Universities. Its purposes, as described in its constitution, are: (a) to assist the co-ordination of higher education in the Atlantic Provinces; (b) to ensure high academic standards in a period of rising costs of academic personnel, laboratories, libraries, etc.; and (c) to avoid unnecessary duplication of faculties and courses of study. The executive director is Dr. H.J. Somers.

2. UNIVERSITY LIBRARY RESOURCES

The adequacy of a university library depends in part upon the holdings of other nearby libraries, as well as upon its own stock of books. Universities located in large cities and provincial capitals often have available to students the sizable collections of public libraries, school libraries, and libraries of provincial legislatures, federal and provincial departments and, perhaps, professional associations. While Table 3-1 must be interpreted cautiously, it does suggest the superior position of Halifax universities and the decidedly disadvantageous positions of Collège Ste. Anne, Université de Moncton, the Nova Scotia Agricultural College, the Nova Scotia Teachers' College and similarly located institutions.

TABLE 3-1

Volumes in Libraries of Universities and Colleges of the Atlantic Provinces and of Other Selected Universities

Institution	Location	Date of Count	Volumes	1967-68 Full-Time Enrolments
			000	no.
Memorial	St. John's	8/67	163	4,446
Prince of Wales	Charlottetown	2/68	22	517
St. Dunstan's	"	3/68	37	852
Acadia	Wolfville	2/68	158	1,684
Collège Ste. Anne	Church Point	2/68	17	164
Dalhousie	Halifax	6/67	317	3,569
N.S. Technical College	"	12/67	37	411
Maritime School of Social Work	"	3/68	5	59
King's	"	2/68	55	201
Pine Hill (estimated)	"	3/68	40	47
St. Mary's	"	3/68	62	1,217
Mount St. Vincent	"	2/68	71	625
Holy Heart Seminary	"		n.a.	55
Convent of the Sacred Heart	"	/66	11	48
N.S. Teachers' College	Truro	2/68	20	661
N.S. Agricultural College	"	2/68	4	192
St. Francis Xavier	Antigonish	2/68	110	2,060
Xavier College	Sydney	2/68	39	447
Mount Allison	Sackville	11/67	142	1,291
N.B. Teachers' College	Fredericton		n.a.	1,158
St. Thomas	"	(Shares UNB Library)		505
University of N.B.	"	2/68	197 }	3,827
Saint John Campus	Saint John	2/68	21 }	
Université de Moncton and affiliates	Moncton	6/67	123	2,047
				(1965-66)
McGill	Montreal	(1964-65)	1,044	11,676
Western	London	"	470	6,032
Alberta	Edmonton	"	423	10,366
British Columbia	Vancouver	"	757	15,890

n.a. - not available.

Source: Data on library holdings of most universities and colleges of the Atlantic Provinces were obtained from counts supplied by librarians. However, data for the Convent of the Sacred Heart were taken from Higher Education in Nova Scotia 1965 (Halifax, University Grants Committee, 1966); data for universities not in the Atlantic Provinces were taken from: D.B.S. Survey of Libraries Part II, Academic Libraries (Ottawa, Queen's Printer, 1967). Enrolments for universities outside the Atlantic Provinces were taken from: D.B.S. Survey of Higher Education Part I (1965-66); Enrolments for universities within the Atlantic Provinces supplied by University Registrars.

Despite recent developments with microfilm and microfiche, the task of improving library services would appear somewhat formidable, especially since, on a per-student basis, universities in the Atlantic Provinces have tended to spend considerably less than universities elsewhere in Canada (Table 3-2).

However, there are some hopeful signs for the future. A school of library science is being established at Dalhousie University. The University of New Brunswick and Dalhousie University libraries are now both linked by telex with the National Library in Ottawa.

TABLE 3-2

Library Operating Expenses per Full-Time University Student*

Province	1962-63		1963-64		1964-65		1965-66	
	$		$		$		$	
Newfoundland	69	(1)	71	(1)	65	(1)	64	(1)
Prince Edward Island	24	(2)	37	(2)	30	(2)	69	(1)
Nova Scotia	52	(9)	69	(9)	95	(9)	108	(9)
New Brunswick	62	(4)	64	(4)	64	(4)	80	(4)
Atlantic	52	(16)	64	(16)	76	(16)	90	(15)
Canada	80	(73)	88	(80)	99	(80)	127	(76)

* Including institutions with 100 or more full-time students. Figures in parentheses refer to the number of institutions reporting.

Source: D.B.S. Preliminary Statistics of Education 1963-64 to 1966-67.

3. CHARACTERISTICS OF TEACHING STAFF

Full-time student enrolment in the post-secondary educational institutions of the region almost tripled over the last decade, rising from somewhat over 10,000 in the school year 1957-58 to almost 30,000 in 1967-68 (Table 3-3). While 92 per cent of this increase occurred in universities and colleges, technical institutes grew at the most rapid rate, with enrolment multiplying nine times. Student increases in teachers' colleges and universities were 151 per cent and 186 per cent respectively. Part-time enrolments rose at a much faster rate.

By comparison, full-time enrolments in universities and colleges (including teachers' colleges) in Canada as a whole increased from 96,000 in 1957-58 to 284,000 in 1967-68 - a growth of 196 per cent.

Within the region, Newfoundland registered the greatest relative increase in post-secondary students, largely the result of a fivefold increase in the number of university students. Prince Edward Island registered a total post-secondary gain of 250 per cent, followed by New Brunswick at 193 per cent and Nova Scotia at 137 per cent.

In 1967-68 technical students in post-secondary courses in New Brunswick were almost seven times their number 10 years earlier, while the number of students in the teachers' college and universities nearly tripled. In Nova Scotia the 10-year rates of growth were: teachers' college, 107 per cent; universities, 133 per cent, and technical institutes, 413 per cent. It should be remembered that enrolments in technical institutes at the beginning of the decade were extremely small. Universities play a larger role in post-secondary education in Nova Scotia than in New Brunswick.

The number of full-time teaching personnel rose 249 per cent over this period, a somewhat greater relative change than the increase in student numbers. (See Table 3-3.) Again the largest percentage increase was in Newfoundland (494 per cent), followed by Prince Edward Island (336 per cent), Nova Scotia (247 per cent) and New Brunswick (183 per cent).

The teaching staff of technical institutes increased to 13 times its 1957-58 level, reflecting the small base in that year. Newfoundland first reported teachers for its two technical colleges in 1963-64. Since that time growth has been about equal in Newfoundland and New Brunswick. Nova Scotia also registered significant growth, and in this province there has been a substantial replacement of part-time by full-time teachers.

TABLE 3-3

Historical Trends in Post-Secondary Education in the Atlantic Provinces

	1957-58	1967-68	% Increase
	no.	no.	%
Full-time student enrolment*	10,117	29,903	196
Part-time student enrolment‡	644	3,760	484
Full-time teaching staff	655	2,283	249
Part-time teaching staff	224	538	140
Administrative staff	308	1,319	328
Full-time student-teacher ratios	15:1	13:1	n.a.
Technical Institutes#	12:1	8:1	n.a.
Teachers' colleges	18:1	19:1	n.a.
Universities	15:1	13:1	n.a.

* Excludes technical institutes in Newfoundland.

‡ Part-time enrolments reported only by universities.

# Nova Scotia and New Brunswick.

Source: Atlantic Development Board, Stock and Flow of Personnel in Post-Secondary Educational Institutions in the Atlantic Provinces, 1968. (An unpublished study prepared for the Board by the Atlantic Provinces Economic Council.)

Full-time university staff rose 227 per cent in the region with provincial increases in the same rank order, and of similar magnitudes, as for all post-secondary teachers. Teachers' colleges registered an increase of 141 per cent - 167 per cent in Nova Scotia and 125 per cent in New Brunswick. Except for Nova Scotia technical institutes, part-time teachers are important only in universities, where an increase of 170 per cent was recorded over the 10-year period.

Rather surprisingly, the region as a whole shows little change in student-teacher ratios over this decade for two of the institutional types and for post-secondary education as a whole.

Individual provinces display varying trends and levels, as do the institutions themselves, but these are offsetting at the regional level.

For universities, the student-teacher ratio rose in Newfoundland, fell in Prince Edward Island and Nova Scotia, and held steady in New Brunswick. The teachers' college ratio fell in Nova Scotia but rose in New Brunswick, and in both provinces is above the university average. For technical institutes the Nova Scotia figures show a rapid drop since 1963-64, while in New Brunswick the ratio held constant.

The problem of interpreting the data for technical schools in Nova Scotia arises as the result of the move from dependence on part-time teaching staff (32 of a total of 36 in 1957-58) to a point in 1967-68 where full-time personnel accounted for 63 of the total of 79 teachers. Because of such interpretation problems it would be desirable to attempt some conversion of part-time students and faculty to full-time equivalents before attempting to project manpower requirements.

The reported increase in administrative staff for the 10-year period was about 1,000 persons, or 328 per cent, resulting in a decline in the aggregate student-administrator ratio from 33:1 in 1957-58 to 23:1 in 1967-68. The value of these statistics is doubtful. The range from institution to institution is so wide as to make any average of little use.

Age Distribution

The distribution of teachers by age is relevant to the rate of teacher turnover and, therefore, to the relation between future teacher demand and supply.

In the school year 1967-68 about 35 per cent of all Atlantic Region post-secondary teachers were between the ages of 30 and 39, with the under-30, 40-49 and 50-64 groups each containing between 15 and 20 per cent of the total (Table 3-4). Teachers at technical institutes were generally younger, and at teachers' colleges older, than university teachers.

For technical institutes three age brackets each contained about one-third of the teachers - under-30, 30-39 and 40 and over (when those not reporting age are excluded). In New Brunswick the age distribution shifted toward younger members, with almost half under 30.

In teachers' colleges the under-40, 40-49, and 50-64 groupings each contained one-third of the faculty with the Nova Scotia staff being younger than that in New Brunswick.

The 30-39 group contained 36 per cent of university teachers, followed by 20 per cent in the 40-49 range. There were 17 per cent under 30 and 15 per cent 50 and over. The age

TABLE 3-4

Percentage Distribution of Post-Secondary Teaching Staff by Age, 1967-68*

Type of Institution	Age Groups					Not Known
	Under 30	30-39	40-49	50-64	65+	
	%	%	%	%	%	%
Technical Institutes	27.9	29.6	12.9	13.3	-	16.3
Teachers Colleges	8.2	19.4	33.7	34.7	1.0	3.1
Universities	17.4	35.8	19.8	13.2	1.7	12.2
Total	18.1	34.5	19.6	14.1	1.5	12.2

* Excludes a certain number of teachers concerning whose characteristics information was unavailable.

Source: Atlantic Development Board. Stock and Flow.... op. cit.

distributions of Prince Edward Island and New Brunswick were generally younger than the region, while Nova Scotia's faculty was somewhat older.

Place of Birth

This section gives an indication of the extent to which the Atlantic Region provides its own post-secondary teachers. The following section will indicate the degree to which the region is able to provide these teachers with their final level of education.

The region itself was the main source of post-secondary teachers, with 49 per cent reporting one of the four provinces as their province of birth. This excludes Memorial University, for which no information was received, and 270 other teachers (mostly part-time staff of Dalhousie University) for whom no place of birth was reported. Teachers' colleges are highest in proportion of native-born (83 per cent), followed by technical institutes (74 per cent) and universities (43 per cent). (See Table 3-5.)

Teachers' colleges had small numbers of staff members from other provinces within the region, Canadian provinces outside the region, the United Kingdom and Continental Europe. The technical institutes also had small numbers from other provinces of the region, provinces outside the region, the United

TABLE 3-5

Post-Secondary Teaching Staff by Place of Birth, Atlantic Provinces, 1967-68*

Place of Birth	Technical Institutes	Teachers' Colleges	Universities‡
	no.	no.	no.
Newfoundland	57	1	8
Prince Edward Island	1	-	65
Nova Scotia	60	30	313
New Brunswick	59	50	265
Other Provinces	22	7	291
United States	2	-	137
United Kingdom	21	5	137
France	1	-	48
Germany	1	-	39
Other Europe	7	2	98
Africa	-	-	18
Australia and New Zealand	1	-	9
Central and South America	1	-	16
India	5	-	48
Other Asia	2	-	35
Not Available	-	3	267
Total	240	98	1,794

* Excludes a certain number of teachers for whom information was unavailable.

‡ Excludes Newfoundland.

Source: Atlantic Development Board. Stock and Flow.... op. cit.

Kingdom, Continental Europe and India. Birth places were more diversified for university staff, including members from all continents. There were significant numbers from the United States, United Kingdom, France, Germany, and India. In total, the ratio of teachers born in the region to those born in the rest of Canada was more than 2:1. European-born teachers outnumbered those from the other six provinces of Canada. The United States and United Kingdom were of equal importance as sources of teachers for the region's universities. In all three Maritime Provinces at least 61 per cent of the teachers were Canadian born, 66 per cent in Prince Edward Island being the highest.

Of the 1,527 teachers in Maritime universities for whom place-of-birth information was obtained, 651 (43 per cent) were born in the Atlantic Region. The rest of Canada provided 19 per cent, followed by the United States and United Kingdom at 9 per cent each. French- and German-born each accounted for 3 per cent of the total, the rest of Europe 6 per cent and Asia 5 per cent. There were 18 faculty members from Africa, 9 from Australia and New Zealand, and 16 from Central and South America.

About 47 per cent of Prince Edward Island university teachers were island-born, a total of 9 per cent in Nova Scotia and New Brunswick, 10 per cent in provinces outside the region.

Nova Scotians made up 34 per cent of that province's university teaching faculty, with 8 per cent coming from other parts of the region, 19 per cent from other provinces, and a total of 22 per cent from the United Kingdom and Continental Europe. The New Brunswick proportions were almost identical.

Place where Highest Degree was Earned

Of 143 teachers in technical institutes with degrees listed by place where earned, 118 had degrees from Canadian institutions and 25 from other countries (10 of which were from American degree-granting institutions). Of the Canadian degrees 104 were from within the region and 14 from the other six provinces. (See Table 3-6.)

In Newfoundland there were 16 persons with degrees from that province, 15 from the Maritimes and 2 from the rest of Canada out of a total of 41 degree-holders. In Nova Scotia 27 final degrees were obtained within the province, 4 in other Atlantic Provinces, 12 in provinces outside the Atlantic Region and 13 in foreign countries, making a total of 56. New Brunswick's 46 degrees were more concentrated - 36 from New Brunswick, 6 from Nova Scotia and 4 from foreign countries.

The teachers' colleges listed 80 persons with degrees, 14 non-Canadian of which 12 were United States. The Nova Scotia staff had 16 obtaining degrees in that province; 28 of the New Brunswick staff of 40 were granted their degrees in the province.

Again, university staff members appear to be less "local", though there is still significant concentration; one-quarter of the degree-holding staff in 1967-68 obtained their highest degree within the region. Another quarter had obtained other Canadian degrees, and there were almost as many from the United States and from Europe.

In Newfoundland almost 40 per cent of the university staff had obtained their highest degrees in Canada, two-thirds of these outside the region. In the other three provinces about half of the teaching personnel earned Canadian degrees, with about equal division between regional and non-Atlantic institutions. The United States was of the same importance as the rest of Canada in each of the four provinces. At the regional level Europe provided about the same number of teachers as the United

TABLE 3-6

Post-Secondary Teaching Staff by Place where Highest Degree Earned, Atlantic Provinces, 1967-68*

Place where Highest Degree Earned	Total	Technical Institutes	Teachers' Colleges	Universities
	no.	no.	no.	no.
Newfoundland	31	16	-	15
Prince Edward Island	3	1	-	2
Nova Scotia	389	44	17	328
New Brunswick	240	43	31	166
Other Provinces	532	14	14	504
United States	503	10	12	481
United Kingdom	294	5	1	288
France	85	1	1	83
Germany	28	-	-	28
Other Europe	78	3	-	75
Africa	10	-	-	10
Australia and New Zealand	7	-	-	7
Central and South America	8	1	-	7
India	21	1	-	20
Other Asia	11	2	-	9
Not Available	24	2	4	18
No Degree	153	97	18	38
Total	2,417	240	98	2,079

* Excludes a certain number of teachers for whom information was unavailable.

Source: Atlantic Development Board, Stock and Flow.... op. cit.

States and as the six non-Atlantic provinces of Canada. In Europe, the United Kingdom was the most important single country, followed by France. It should be noted that, in New Brunswick, France provided more than three-quarters as many teachers as the United Kingdom, 54 for France to 71 for the United Kingdom.

Location of Previous Post-Secondary Teaching Appointment

This section and the two following sections deal with the experience and tenure of post-secondary teachers, factors likely to affect the rate of teacher turnover.

Information for this portion of the survey was not available from Memorial University and Nova Scotia Teachers' College.

Of the teachers at technical institutes, 83 per cent were still at the institution to which they were first appointed (Table 3-7). The provincial percentages were 77 in Nova Scotia, 83 in New Brunswick and 89 in Newfoundland. The 40 with previous appointments included 22 in other post-secondary institutions of the Atlantic Provinces, 7 in other provinces, 4 in the United States, and 4 in Europe.

TABLE 3-7

Distribution of Teaching Staff by Location of Previous Post-Secondary Teaching Appointment, Atlantic Provinces, 1967-68*

Location	Technical Institutes	Teachers' Colleges‡	Universities#
	no.	no.	no.
First Appointment	200	41	940
Atlantic Provinces	22	3	113
Other Provinces	7	5	175
United States	4	5	141
Europe	4	-	100
Other	2	-	16
Not Available	1	-	309
Total	240	54	1,794

* Excludes a certain number of teachers for whom information was unavailable.

‡ New Brunswick only.

Maritime Provinces.

Source: Atlantic Development Board. Stock and Flow.... op. cit.

Of the 54 teachers at the New Brunswick Teachers' College, 41 (76 per cent) received their first post-secondary appointment at this college. (The relationship in Nova Scotia is believed to be similar.) Of the balance, three previous appointments were in the Maritimes, five in provinces outside the Atlantic Region, and five in the United States.

Somewhat more than 50 per cent of the university teaching staff were reported in 1967-68 as being at the institution to which they were first appointed. The range was narrow - from 50 per cent in New Brunswick to 54 per cent in Nova Scotia. The Nova Scotia distribution of those with previous appointments is not too useful in that locational details were not available for 300 of the 488 persons involved. However, a large portion of these are part-time people, so the full-time distribution is not as greatly disturbed. Because of the weight of Nova Scotia, the Maritime total is affected as well.

In New Brunswick universities, some 28 per cent of the staff had previous post-secondary teaching appointments in Canada, about evenly divided between the Atlantic Region and the rest of Canada. The proportion in Prince Edward Island was almost identical for the other provinces of Canada, but was only half as large for the Atlantic Provinces. Previous appointments in the United States and Europe each accounted for 10 per cent of the total New Brunswick faculty members. In Prince Edward Island the proportions were 12 per cent and 4 per cent respectively.

Number of Years of Post-Secondary Teaching Experience

Information on length of post-secondary teaching experience was collected only in the province of Nova Scotia. Almost 45 per cent of all post-secondary teachers reported less than 10 years of post-secondary teaching experience (Table 3-8). Information was not available on half of the total. Because of this it is difficult to relate tenure and experience.

TABLE 3-8

Teaching Personnel in Nova Scotia by Post-Secondary Teaching Experience, 1967-68

Number of Years	Technical Institutes	Teachers' Colleges	Universities	Total
	no.	no.	no.	no.
1-3	5	14	260	279
4-6	5	10	116	131
7-9	3	10	84	97
10-19	5	2	145	152
20-29	5	5	51	61
30+	3	1	24	28
Not Available	44	2	379	425
Total	70	44	1,059	1,173

Source: Atlantic Development Board. Stock and Flow.... op. cit.

For technical institutes post-secondary teaching experience in the region would be very short because many of the institutions concerned are five years old or less. Very few technical institute teachers reported previous appointments. Over three-quarters of the Nova Scotia Teachers' College staff had less than 10 years of such teaching experience. For full-time university staff some 43 per cent had under 10 years experience, 14 per cent had 10-19 years and 7 per cent 20 or more years. There was no information for 37 per cent.

Table 3-9 gives some indication of length of experience (probably mostly teaching experience) of the full-time teaching staff of Canadian universities and colleges. Comparisons are made between the Atlantic Region, Québec, Ontario and the Western Provinces. Among these regions, the Atlantic Provinces had by far the highest percentage of teaching staff with less than five years experience following the award of a first degree, and a somewhat higher percentage than any other region in the 5-9 year group. This region also had the highest percentage (by a small margin) in the 30-and-over group. In each of the intervening groups, however, the Atlantic Region had the lowest percentage.

TABLE 3-9

Full-Time Teaching Staff of Canadian Universities and Colleges: Years to 1965 Since Award of First Degree

Region	Number of Years						No University Degree	No Information
	0-4	5-9	10-14	15-19	20-29	30+		
	%	%	%	%	%	%	%	%
Atlantic Region	12.8	22.8	18.3	17.3	15.2	11.3	1.2	1.1
Québec	7.4	19.5	20.3	18.7	17.0	9.9	1.4	5.8
Ontario	7.2	21.6	20.3	19.0	15.9	11.2	1.5	3.3
Western Region	7.2	22.1	21.5	20.1	16.1	10.3	1.6	1.1

Source: D.B.S. Salaries and Qualifications of Teachers in Universities and Colleges, 1965-66.

Number of Years Teaching at Present Institution

For the region as a whole, the percentages of those reporting who were in their present institutions for 1-3 years came to 57 per cent for technical institutes, 46 per cent for universities and only 31 per cent for teachers' colleges. Those reporting tenure of 10 years or more comprised 12 per cent for technical institutes, 16 per cent for universities and 26 per cent for teachers' colleges. Tenure of 1-3 years at universities ranged from 50 per cent in Nova Scotia to 66 per cent in Prince Edward Island; for technical institutes, from 49 per cent in Nova Scotia to 67 per cent in New Brunswick. In view of the recent rapid expansion of most post-secondary institutions such high proportions of persons with only short periods of tenure are not surprising. (See Table 3-10.)

TABLE 3-10

Percentage Distribution of Teaching Staff by Number of Years at Present Institution, Atlantic Provinces, 1967-68*

Type of Institution	Number of Years						
	1-3	4-6	7-9	10-19	20-29	30+	Not Known
	%	%	%	%	%	%	%
Technical Institutes	56.7	25.4	6.2	7.5	3.3	0.8	-
Teachers' Colleges	30.6	26.5	16.3	14.3	11.2	1.0	-
Universities	46.3	14.5	8.4	11.1	3.8	0.9	15.0
Total	46.7	16.0	8.5	10.9	4.1	0.9	12.9

* Excludes a certain number of teachers for whom information was unavailable.

Source: Atlantic Development Board. Stock and Flow.... op. cit.

Highest Earned Degree

In the school year 1967-68, 7 per cent of post-secondary teachers in the Atlantic Provinces had no university degree (Table 3-11). Of the total of 159 in this category, 98 were in technical institutes, 44 in universities and 17 in teachers' colleges. Twenty-one per cent of all teachers had a bachelor's degree, 37 per cent a master's, and 35 per cent a doctorate. While Nova Scotia institutions employed 48 per cent of all post-secondary teachers in the region, they had 64 per cent of those holding a Ph.D. or equivalent. New Brunswick, with one-third of all teachers, had only 21 per cent of teachers with Ph.D. degrees.

Over 40 per cent of the technical teachers did not possess a university degree, while 43 per cent had a bachelor's degree and 16 per cent a master's or doctorate. In Newfoundland, and also in New Brunswick, about half of the teachers had no degree, while most of the remaining half had a B.A. or equivalent. Technical teachers in Nova Scotia had higher academic qualifications: 43 per cent were at the bachelor's level, 30 per cent at the master's, and 6 per cent had doctorates, leaving only 21 per cent with no degree.

TABLE 3-11

Percentage Distribution of Teaching Staff by Highest Degree Earned, Atlantic Provinces, 1967-68*

Type of Institution	No Degree	B.A.	M. A.	Ph.D.
	%	%	%	%
Technical Institutes	40.8	43.3	13.8	2.1
Teachers' Colleges	17.3	37.8	41.8	3.1
Universities	2.1	17.8	39.5	40.5
Total	6.6	21.2	37.1	35.2

* Excludes a certain number of teachers for whom information was unavailable.

Source: Atlantic Development Board. Stock and Flow.... op. cit.

On the staff of the teachers' colleges 17 per cent had no degree, 38 per cent had a bachelor's, 42 per cent a master's and 3 per cent a doctorate. Nova Scotia teachers' college staff members had generally higher educational backgrounds than their counterparts in New Brunswick.

Forty per cent of university personnel had a degree at the doctorate level, another 40 per cent had an M.A. or equivalent, leaving 18 per cent at the bachelor's level and 2 per cent with no degree. Compared to this regional distribution, Prince Edward Island and New Brunswick had smaller proportions of Ph.D.'s, more M.A.'s, and about the same relative number of persons with bachelor's degrees. Nova Scotia was proportionally higher at the Ph.D. level and lower for bachelor's. Newfoundland had a slightly higher number of bachelor's and somewhat fewer doctorates.

Table 3-12 shows a percentage distribution of full-time teaching staff of Canada's universities and colleges by highest degree earned. Data are for the school year 1965-66 and for each region as well as for the country as a whole. The Atlantic Region, with 33 per cent of its staff holding doctorates, was lowest of all regions; the average for Canada was 44 per cent and Ontario had 52 per cent. At the other end of the scale, 22 per cent of the Atlantic Region's teaching staff had either a first baccalaureate or no university degree compared to only about 13 per cent for Canada and each of the other regions.

The Atlantic Region had the lowest percentages of doctorates for professors, associate professors, assistant pro-

TABLE 3-12

Percentage Distribution by Highest Earned Degree of Full-Time Teaching Staff of Universities and Colleges, 1965-66

(including both lay and religious teachers)

Region or Degree	Deans	Professors	Associate Professors	Assistant Professors	Professors Ungraded*	Lecturers and Instructors	Total
	%	%	%	%	%	%	%
Atlantic Provinces							
Doctorate	50.0	57.1	47.9	32.7	13.6	4.9	33.4
Master's	39.3	25.5	36.5	51.2	59.1	46.0	42.6
First professional degree beyond first baccalaureate	3.6	10.2	4.7	5.9	13.6	7.7	6.9
First baccalaureate	7.1	6.1	10.1	9.0	4.6	38.2	15.5
No university degree	-	1.0	0.4	1.0	-	2.1	1.0
No information	-	-	0.4	0.2	9.1	1.1	0.6
Québec							
Doctorate	37.7	58.1	50.2	36.7	12.5	9.8	34.4
Master's	45.9	23.8	29.8	39.5	40.0	50.5	37.8
First professional degree beyond first baccalaureate	13.2	13.0	11.6	11.5	22.7	14.2	13.5
First baccalaureate	1.6	4.4	6.8	10.6	18.3	18.9	11.3
No university degree	-	-	0.5	1.1	0.7	3.6	1.3
No information	1.6	0.7	1.1	0.6	5.8	3.0	1.7
Ontario							
Doctorate	56.6	71.5	66.9	52.7	61.5	7.6	52.0
Master's	30.3	16.2	21.5	34.9	19.2	56.2	31.3
First professional degree beyond first baccalaureate	9.1	4.2	2.6	2.7	-	4.6	3.5
First baccalaureate	4.0	7.9	8.5	8.7	7.7	25.2	11.5
No university degree	-	0.1	0.4	0.7	11.6	5.7	1.5
No information	-	0.1	0.1	0.2	-	0.7	0.2
Western Provinces							
Doctorate	65.0	71.2	59.4	47.6	50.0	5.9	47.2
Master's	21.6	15.8	26.3	37.3	35.8	51.0	33.2
First professional degree beyond first baccalaureate	6.7	5.9	4.6	4.1	7.1	4.5	4.7
First baccalaureate	6.7	5.9	7.8	9.4	-	30.1	12.1
No university degree	-	0.7	0.8	0.7	-	5.6	1.6
No information	-	0.5	1.1	0.9	7.1	2.9	1.2
Canada							
Doctorate	53.2	67.3	59.4	45.2	17.6	7.4	44.4
Master's	33.1	18.6	26.1	38.5	39.5	52.1	34.6
First professional degree beyond first baccalaureate	8.9	7.0	5.2	5.6	19.9	7.5	6.6
First baccalaureate	4.4	6.5	8.1	9.4	16.0	26.4	12.0
No university degree	-	0.3	0.6	0.8	1.4	4.7	1.4
No information	0.4	0.3	0.6	0.5	5.6	1.9	1.0

* In some small colleges the ranks of associate professor and assistant professor are not used; all above the rank of lecturer or instructor are classed as professors.

Source: D.B.S. Salaries and Qualifications of Teachers in Universities and Colleges, 1965-66.

fessors and for lecturers and instructors, and it had the second lowest percentage in the country (Québec being the lowest) for deans and ungraded professors. For the Atlantic Region and Canada as a whole, the respective percentages were: deans 50 and 53 per cent, professors 57 and 67 per cent, associate professors 48 and 59 per cent, assistant professors 33 and 55 per cent, ungraded professors 14 and 18 per cent, and lecturers and instructors 5 and 7 per cent.

The respective percentages for the Atlantic Region and Canada for those with only a first baccalaureate or no university degree were: deans 7 and 4 per cent, professors 7 and 7 per cent, associate professors 11 and 9 per cent, assistant professors 10 and 10 per cent, ungraded professors 5 and 17 per cent, and lecturers and instructors 40 and 31 per cent.

The shortage of qualified staff seems due in part to the scarcity of students at the doctoral level in Atlantic Provinces universities. Instead of producing their own instructor capital, they must rely to a large extent on outside universities, although the situation is beginning to improve in some disciplines. Only seven earned doctorates were awarded by Atlantic Provinces universities in 1955-56, and in 1963-64 just six. However, by 1967-68, 29 doctorates were awarded, and in that year 258 students were enrolled in full-time doctoral programs. These included 159 at Dalhousie University, 90 at the University of New Brunswick, 8 at the Nova Scotia Technical College and 1 at Memorial University. Virtually all graduate degrees have been in the physical sciences and engineering, but 1967-68 enrolments included 25 doctoral students in English, 12 in history, 6 in mathematics and 33 in psychology. In other crucial fields, notably education, economics, sociology and commerce, there are no doctoral students. Also, many of the doctoral students originate in and return to areas outside the Atlantic Provinces.

Rank

Table 3-13 presents the distribution of the university teaching staff in the region by rank for the school year 1967-68. Provincial detail indicates that, proportionally, Newfoundland had fewer professors and associate professors, but more assistant professors and lecturers than the region as a whole. Prince Edward Island reported more associate and assistant professors, but fewer lecturers, while New Brunswick, compared to the regional average, had fewer associate professors and more lecturers. Nova Scotia was relatively high in professors and associate professors, but low in lecturers.

According to Table 3-14, in 1966-67 the Atlantic Region had percentages of professors and associate professors below the national average and percentages of assistant professors, lecturers and instructors above it.

TABLE 3-13

Percentage Distribution of University Teaching Staff by Rank, 1967-68*

Rank	Full-Time	Part-Time	Total
	%	%	%
Deans	2.3	nil	1.9
Professors	16.0	3.9	14.0
Associate Professors	21.2	16.6	20.5
Assistant Professors	35.3	16.0	32.3
Lecturers	21.0	40.4	24.1
Others	4.2	23.2	7.2
Total	100.0	100.0	100.0

* Excludes a certain number of teachers for whom information was unavailable.

Source: Atlantic Development Board. Stock and Flow.... op. cit.

TABLE 3-14

Percentage Distribution, Full-Time Teaching Staff, by Rank and Region, 1966-67

Rank	Atlantic Region	Central Canada	Western Region	Canada
	%	%	%	%
Deans	2.6	1.8	1.5	1.8
Professors	18.7	24.9	17.6	21.1
Associate Professors	21.5	25.6	28.6	26.4
Assistant Professors	36.2	30.7	38.0	34.4
Lecturers and Instructors	21.0	16.0	13.6	15.5
All Ranks	100.0	100.0*	100.0*	100.0*

* Includes 64 ungraded professors not included elsewhere (39 in Central Canada, and 25 in the West).

Source: D.B.S. Salaries and Qualifications of Teachers in Universities and Colleges, 1966-67.

Teachers' Plans for the School Year 1968-69

The survey summarized in Table 3-15, conducted in the summer of 1968, indicates an over-all teacher retention rate of 89 per cent - that is, all but 11 per cent of teachers on staff in 1967-68 planned to remain at their present institution for the 1968-69 school year. There was almost no variation among the three types of institutions. For technical institutes the regional retention rate was 90 per cent with a range from 84 per cent in New Brunswick to 96 per cent in Newfoundland.

TABLE 3-15

Departures Planned by Post-Secondary Teachers Prior to 1968-69 Academic Year, Atlantic Provinces*

Plans	Technical Institutes	Teachers' Colleges	Universities
	no.	no.	no.
Total Departures	23	11	233
Continue to Teach	3	2	68
In Prince Edward Island	-	-	7
In Nova Scotia	2	-	9
In New Brunswick	-	-	14
In other provinces	-	2	19
In other countries	1	-	19
Leave Teaching	20	9	132
To resume studies	8	1	57
For sabbatical leave	1	3	28
For post-secondary administration	1	-	16
For other occupation	2	-	14
To Retire - family	6	2	7
To Retire - other	2	3	10
Reason not Specified	-	-	33

* Excluding "no replies" and an additional number of teachers for whom information was unavailable.

Source: Atlantic Development Board. Stock and Flow.... op. cit.

For teachers' colleges the average rate was 89 per cent, with provincial rates of 82 per cent in Nova Scotia and 94 per cent in New Brunswick.

The regional university rate was also 89 per cent, with a range from 82 per cent in Prince Edward Island to 90 per cent in Nova Scotia. The lower Prince Edward Island rate may be related to the controversy generated by the government's move to amalgamate the two universities. One institution was responsible for 38 "No replies" in New Brunswick, and these persons have been eliminated from this analysis, as have four "No replies" in Nova Scotia.

Of 22 departures from technical institutes, only two persons were intending to teach in 1968-69. Those leaving the profession for this year were mainly planning to resume their studies or retire. Only three were taking up other occupations. The situation with respect to teachers' colleges was similar, except that sabbatical leave replaced resumption of studies.

In the case of university departures, 29 per cent planned to continue to teach; 57 per cent were leaving the profession, while details on the remaining 14 per cent were unavailable. Of those continuing to teach, 44 per cent were intending to remain in the region, with the balance moving in equal numbers to other provinces and other countries.

Almost two-thirds of those leaving university teaching were resuming their studies or taking sabbatical leave. It is thus likely that many intend to resume their teaching careers in the near future. Thirty people were going into new occupations, about half into post-secondary administration. Retirement claimed 17 persons, 7 per cent of all departures.

4. SALARIES OF TEACHING STAFF

Annually the Canadian Association of University Teachers publishes data supplied to the Dominion Bureau of Statistics by the various institutions concerning the salaries of full-time lay teaching staff at Canadian universities and colleges, including average salaries by academic ranks. Table 3-16 indicates that in 1966-67, 41 institutions reported, including 10 in the Atlantic Provinces. For average salary of all staff, none of the reporting Atlantic universities was in the top quartile. The rank for Dalhousie was 14th, for Nova Scotia Technical College 17th. All others were below the median rank, half in the bottom quartile. For full professors, no Atlantic university was above the median; for associates, only St. Francis Xavier. Thus, teaching staff in the Atlantic Provinces are less well qualified, on the average, than elsewhere, and salaries for each academic rank are lower. The D.B.S. Daily Bulletin for February 3, 1967, in analysing these data, stated: "While percentage increases for the Atlantic Provinces kept pace with other regions, they did not appreciably close the gaps that have existed for many years. These gaps were particularly large among the senior academic ranks."1/

Rosenbluth's study of variations in academic salaries in Canada in 1965-66 suggests the variables underlying these low rankings of Atlantic universities. Low salaries in Canada are associated with small enrolments, church-controlled and privately-controlled institutions, lower academic ranks, younger ages, lower qualifications, and the liberal arts. The universities and staffs in the Atlantic Provinces more often than elsewhere fit these classifications. But even with all these variables held constant, Rosenbluth found that males in the Atlantic universities received $1,400 less than their counterparts in Ontario having similar qualification, rank, sex, age and field of specialization, in institutions of similar size and type.2/ They received $1,500 less than their counterparts in Québec and $1,100 less than their counterparts in the West. For females the differentials were almost as great. (Rosenbluth, 1967)

1/ Cited in University Salaries in 1966-67, C.A.U.T. Bulletin 15 (February, 1967): 31.

2/ To close the $1,400 gap between salaries of 1,500 professors in the Atlantic Provinces and their counterparts in Ontario in 1965-66 would have cost about $21 million.

TABLE 3-16

Rank Order among Similar Canadian Institutions of Atlantic Universities and Colleges by Average Salary Paid Full-Time Lay Teaching Staff in 1966-67

Institution	Rank Order of Average Salaries Paid to:				
	All Staff	Full Professors	Associates	Assistants	Rank Below Assistant
Memorial University	28	33	31	24	31
Prince of Wales Coll.	41	*	39	39	39
St. Dunstan's University	35	*	*	32	*
Dalhousie University	14	19	24	10	21
Nova Scotia Technical College	17	28	30	12	16
St. Mary's University	29	*	21	33	37
St. Francis Xavier University	31	20	14	35	36
Mount Allison	30	35	35	26	28
University of New Brunswick	22	30	33	34	23
Universite de Moncton	40	36	38	41	38
Number of Institutions Reporting	41	36	39	41	39

* Not ranked because no teachers in this category or numbers too small to preserve confidentiality.

Source: Salaries of Full-Time Lay Teaching Staff at Canadian Universities and Colleges, 1966-67. C.A.U.T. Bulletin 15 (Feb. 1967): 21-30.

He found also that the differential between Atlantic and other universities was greater when rank was excluded from the analysis than when rank was included. This reflects the higher proportion of low-ranking staff in Atlantic universities.

Table 3-17 indicates another disadvantageous comparison; the ratio of full-time students to full-time teaching staff is higher in the Atlantic Provinces than elsewhere in Canada, although the gap is declining.

The university student in the Atlantic Provinces, compared to his counterpart elsewhere in Canada, has had less adequate libraries and less qualified instructors with heavier teaching loads. Moreover, even with the same qualifications instructors have received less pay.

TABLE 3-17

Average Number of Full-Time Students per Full-Time Faculty Member, 1961-62 to 1967-68

Year	Atlantic Provinces	Canada
	no.	no.
1961-62	15.4	12.2
1962-63	15.1	12.1
1963-64	13.9	12.2
1964-65	14.0	12.5
1965-66	14.8	14.1
1966-67 (estimate)	13.4	13.7
1967-68 (estimate)	13.4	12.9

Source: Estimated ratios for 1967-68 were calculated from data contained in D.B.S. Advance Statistics of Education 1967-68, and Atlantic Development Board, Stock and Flow of Personnel in Post-Secondary Educational Institutions in the Atlantic Provinces, 1968; the ratios for 1966-67 and 1965-66 were contained in D.B.S. Salaries and Qualifications of Teachers in Universities and Colleges, 1966-67; for earlier years, ratios were calculated from data contained in D.B.S. Survey of Higher Education Part II, 1964-65.

5. FINANCE

Table 3-18 shows that, in 1966-67, operating expenditures per student in the Atlantic Region were about $500 below the Canadian average and about $1,100 below the level for Ontario. A substantial proportion of these differences is accounted for by lower costs of instruction per student in the Atlantic Region. However, universities' expenditures as a percentage of personal income were higher in the Atlantic Provinces than in any other region of Canada. The figure for the Atlantic Region was 1.33 per cent, compared to a Canadian average of 1.23 per cent. Salaries and wages as a percentage of total operating expenditures were lower in the Atlantic Region than in any other region of the country: 62.7 per cent, compared to an average for Canada of 66.5 per cent.

TABLE 3-18

Indicators of Operating Expenditures, Including Assisted Research, 1966-67

Indicators	Atlantic Provinces	Québec	Ontario	Western Provinces	Canada
Total Operating Expenditures ($ 000)	43,436	154,338	214,813	166,628	579,215
Full-Time Enrolment (no.)	21,700	75,070	68,589	67,313	232,672
Expenditures per Student ($):					
Instruction	1,084	1,119	1,646	1,396	1,351
Library	142	109	212	182	164
Administration	151	197	226	147	187
Plant Maintenance	219	229	309	236	253
Total Operation Expenditures	2,002	2,056	3,132	2,475	2,489
Increase over Previous Year (%) in:					
Full-Time Enrolment	8.9	11.5	16.3	12.8	13.0
Total Expenditures	33.2	24.8	41.1	34.6	34.0
Expenditures per Student	22.4	11.9	21.3	19.3	18.5
Total Salaries and Wages ($ 000)	27,249	107,198	143,168	107,429	385,044
Salaries and Wages as % of Total Operating Expenditures	62.7	69.5	66.6	64.5	66.5
Universities' Current Expenditures as % of:					
Personal Income	1.33	1.27	1.15	1.29	1.23
Total Education Expenditures	..	..	..	..	14.02
National Income	..	..	..	..	1.25
Gross National Product	..	..	..	..	0.93

Source: D.B.S. Daily Bulletin, October 29, 1968, p. 6.

The increase over the previous year in total enrolment in the Atlantic Region was 8.9 per cent, the lowest of any, the Canadian figure being 13.0 per cent. Total expenditures in the Atlantic Region increased by 33.2 per cent over the preceding year, slightly below the Canadian advance of 34.0 per cent. Expenditures per student increased over the previous year by 22.4 per cent in the Atlantic Region, the most rapid advance of any region; the Canadian average was 18.5 per cent.

With the exception of the Province of Québec, the Atlantic Region in 1966-67 received the highest percentage of operating expenditures of any region of the country in the form of students' fees: 27.3 per cent, compared to 22.3 per cent for Canada. The federal government provided 34.2 per cent of operating expenditures in the Atlantic Region, the highest percentage in the country; the figure for Canada as a whole was 23.0 per cent. Provincial governments provided 26.5 per cent in the Atlantic Region, the lowest percentage in the country; the Canadian figure was 42.8 per cent. (See Table 3-19.)

In 1966-67 the federal government contributed a much larger percentage to capital expenditure in the Atlantic Region than in any other region of the country (Table 3-20). The figures for the Atlantic Region and Canada were 17.4 and 3.5 per cent respectively. The position was reversed with respect to provincial grants, the Atlantic Region having the lowest percentage among the regions. The figures for the Atlantic Region and Canada were 15.1 and 61.1 per cent respectively. Loans made up 44.2 per cent of capital expenditures in the Atlantic Region, a much higher percentage than any other region, the Canadian percentage being only 18.5.

Stated as simply as possible, the Federal-Provincial Fiscal Arrangements Act, 1967 is a vehicle through which federal transfers of fiscal resources are made to assist the provinces in meeting the rising costs of post-secondary education. The Act makes provision for the provinces to receive, for 1967-68, the higher of (a) $15 per capita of population or (b) 50 per cent of eligible operating expenditures of post-secondary education institutions. Three of the 10 provinces (Newfoundland, Prince Edward Island and New Brunswick) were in 1967-68 on the $15-per-capita rate. Escalation of this per-capita base in future years is based on the national rate of increase of eligible costs. When, in any of the three provinces, 50 per cent of eligible costs equals or exceeds the entitlement on a per-capita basis, that province will move to the 50-per-cent base. Movement can only be to the 50-per-cent base.

For the purposes of the Act, post-secondary education is defined as every course of studies that requires for admission the attainment of a level not lower than that of junior matriculation in each province.1/ Thus the expenditures of the

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1/ However, federal contributions to training leading to Registered Nurse in hospital schools of nursing are made through health grants.

TABLE 3-19

Sources of Total Operating Income, Including Funds for Assisted Research, 1966-67

Source	Atlantic Provinces	Québec	Ontario	Western Provinces	Canada
	$ 000				
Student fees	11,828	43,297	42,700	32,128	129,953
Federal government	14,799	18,077	57,454	43,353	133,683
Provincial government	11,464	61,464	97,049	79,102	249,079
Municipal government	3	-	444	1,312	1,759
Corporations	218	1,970	1,327	1,441	4,956
Foundations	421	1,479	3,545	3,696	9,141
Religous organizations	1,326	11,982	2,489	1,497	17,294
Alumni	43	604	347	22	1,016
Other gifts	478	727	1,441	1,694	4,340
Endowments	2,105	3,911	3,001	489	9,506
Other income (including ancillary enterprises net)	607	7,550	7,083	5,617	20,857
Total income	43,292	151,061	216,880	170,351	581,586
Ancillary enterprises (gross)	8,290	18,834	23,240	20,602	70,966
	per cent				
Student fees	27.3	28.6	19.7	18.9	22.3
Federal government	34.2	12.0	26.5	25.4	23.0
Provincial government	26.5	40.7	44.7	46.4	42.8
Municipal government	-	-	0.2	0.8	0.3
Corporations	0.5	1.3	0.6	0.8	0.9
Foundations	1.0	1.0	1.6	2.2	1.6
Religious organizations	3.0	7.9	1.1	0.9	3.0
Alumni	0.1	0.4	0.2	-	0.2
Other income	1.1	0.5	0.7	1.0	0.7
Endowments	4.9	2.6	1.4	0.3	1.6
Other income (including ancillary enterprises)	1.4	5.0	3.3	3.3	3.6
Total income	100.0	100.0	100.0	100.0	100.0
Ancillary enterprises (gross)	19.1	12.5	10.7	12.1	12.2

Source: D.B.S. Daily Bulletin, October 29, 1968.

TABLE 3-20

Capital Income and Expenditures, 1966-67

	Atlantic Provinces	Québec	Ontario	Western Provinces	Canada
			$ 000		
1. Balance at beginning of year	8,416	3,490	28,024	12,324	52,254
Income					
2. Federal government grant	5,608	457	796	4,293	11,154
3. Provincial government grant	4,851	26,946	103,675	57,576	193,048
4. Municipal government grant	-	-	448	2,038	2,486
5. Corporations	1,600	1,186	4,390	492	7,668
6. Foundations	832	414	226	947	2,419
7. Religious organizations	854	728	5,501	1,388	8,471
8. Alumni	937	147	3,262	10	4,356
9. Other gifts	1,847	2,171	2,690	4,246	10,954
10. Plant funds	298	281	987	185	1,751
11. Transfer in, less transfer out	1,007	4,554	6,013	2,312	13,886
12. Profit or loss on cap. assets	133	7	601	382	1,109
13. Net income (2 to 12)	17,967	36,877	128,589	73,869	257,302
14. Loans	14,238	5,107	22,435	16,693	58,473
15. Total (13+14)	32,205	41,984	151,024	90,562	315,775
16. Grand total (1+15)	40,621	45,474	179,048	102,886	368,029
Expenditures					
17. Land	899	2,162	10,802	850	14,713
18. Buildings and contents	35,273	34,572	133,747	90,478	294,070
19. Total expenditure (17+18)	36,172	36,734	144,549	91,328	308,783
20. Balance at end of year	4,449	8,740	34,499	11,558	59,246
21. Grand total (19+20)	40,621	45,474	179,048	102,886	368,029
			per cent		
Income					
2. Federal government grants	17.4	1.1	0.5	4.7	3.5
3. Provincial government grants	15.1	64.2	68.6	63.6	61.1
4. Municipal government grants	-	-	0.3	2.3	0.8
5. Corporations	5.0	2.8	2.9	0.6	2.4
6. Foundations	2.6	1.0	0.1	1.0	0.8
7. Religious organizations	2.7	1.7	3.6	1.5	2.7
8. Alumni	2.9	0.3	2.2	-	1.4
9. Other gifts	5.7	5.2	1.8	4.7	3.5
10. Plant funds	0.9	0.7	0.7	0.2	0.5
11. Transfer in, less transfer out	3.1	10.8	4.0	2.6	4.4
12. Profit or loss on cap. assets	0.4	-	0.4	0.4	0.4
13. Net income (2 to 12)	55.8	87.8	85.1	81.6	81.5
14. Loans	44.2	12.2	14.9	18.4	18.5
15. Total (13+14)	100.0	100.0	100.0	100.0	100.0
Expenditures					
17. Land	2.5	5.9	7.5	0.9	4.8
18. Buildings and contents	97.5	94.1	92.5	99.1	95.2
19. Total expenditures	100.0	100.0	100.0	100.0	100.0

Source: D.B.S. Daily Bulletin, October 29, 1968.

senior matriculation high school year are eligible for inclusion in calculating total resource transfers. To be eligible under the Act, post-secondary courses were to be of not less than 24 weeks duration and must be certified as such by provincial authorities.

The Act indicated what expenditures were not considered as operating expenditures of post-secondary institutions. In general, these include amounts expended for student financial aid; for the capital cost of land, buildings, physical plant, facilities or equipment (except as otherwise provided by regulation); for interest on capital debts; for depreciation or rent on buildings, physical plant, facilities, or equipment; and for certain ancillary enterprises undertaken or operated by an educational institution. The Department of the Secretary of State administers the adjustment payments.

The costs of university education include not only operating and capital expenditures of universities but also the personal expenses of students. A future increase in the proportion of young people enrolled in post-secondary education implies the extension of enrolments into the lower-income segments of the population. Their participation will have to be encouraged. For them the prospects of a $1,500-2,500 debt under the Canada Students Loan Plan, especially for a first-year student, may be beyond contemplation. Also, with students comprising a higher proportion of the population, summer and part-time jobs become harder to get. With more graduate students and more students married and with families, costs will be even higher.

6. SUMMARY

Full-Time Student Enrolment in Post-Secondary Institutions in the Atlantic Region almost Tripled over the Last Decade.

Enrolment increased from somewhat over 10,000 in the school year 1957-58 to just over 30,000 in 1967-68. Though 92 per cent of this increase occurred in universities and colleges, technical institutes grew at the most rapid rate, with enrolment multiplying nine times. Student increases in teachers' colleges and universities were 151 per cent and 186 per cent respectively. Part-time enrolment in universities rose to almost six times its 1957-58 level.

For Historical Reasons, there is a Relatively Large Number of Universities and Colleges in the Atlantic Region.

There are more than a score of universities and colleges, many of them over a century old. Over half have full-time enrolments of less than a thousand students. There are relatively few technical institutes, all of which have either been opened or greatly expanded within the past few years.

Operating Expenditures per University Student in the Atlantic Provinces are Substantially below the Canadian Average.

In 1966-67, operating expenditures per student in the Atlantic Region were about $500 below the Canadian average and around $1,100 below the level for Ontario. A substantial proportion of these differences is accounted for by lower costs of instruction per student in the Atlantic Region. Compared to his counterpart elsewhere, the Atlantic Provinces student has less adequate libraries and less qualified instructors with heavier teaching loads. Moreover, even with similar qualifications, instructors at all ranks have received less pay. University salaries and wages as a percentage of total operating expenditures in 1966-67 were lower in the Atlantic Provinces than in any other region - 62.7 per cent compared to an average for Canada of 66.5 per cent.

Despite the relatively low level of expenditure, however, university expenditures represent a higher proportion of personal income in the Atlantic Provinces than elsewhere - 1.33 per cent compared to a Canadian average of 1.23 per cent.

Only in Québec do Student Fees Contribute a Higher Proportion of University Operating Costs.

Student fees provided 27.3 per cent of operating expenditures in the Atlantic Region in 1966-67; 22.3 per cent in Canada as a whole. The federal government provided 34.2 per cent of operating expenditures in the Atlantic Region, the highest percentage in the country; the figure for Canada as a whole was only 23.0 per cent. Atlantic provincial governments provided the lowest share - 26.5 per cent; the Canadian average for provincial contributions was 42.8 per cent.

The Federal-Provincial Fiscal Arrangements Act, 1967 is a vehicle through which federal transfers of fiscal resources are made to assist the provinces in meeting the rising costs of post-secondary education. For 1967-68, the Act provided the higher of (a) $15 per capita of population or (b) 50 per cent of eligible post-secondary operating expenditures. Three of the 10 provinces (Newfoundland, Prince Edward Island and New Brunswick) were on the $15-per-capita rate in 1967-68. When in any of these three provinces $15 per capita equals or exceeds the 50 per cent figure, it will move to the latter base. Movement can only be to the 50-per-cent base.

For Capital Expenditure in 1966-67, the Federal Government Contributed a much Larger Share in the Atlantic Region than Elsewhere.

The federal shares for the Atlantic Region and Canada as a whole were 17.4 and 3.5 per cent respectively. The position was reversed with respect to provincial capital grants, Atlantic Provinces contributing 15.1 per cent, compared to a provincial share of 61.1 per cent for Canada as a whole. Loans made up 44.2 per cent of capital expenditures in the Atlantic Region, a much higher percentage than in any other region, the Canadian figure being only 18.5 per cent.

A Future Increase in the Proportion of Young People Enrolled in Post-Secondary Education Implies the Extension of Enrolments into the Lower-Income Segments of the Population.

Their participation will have to be encouraged. For them the prospect of a $1,500-2,500 debt under the Canada Students Loan Plan, especially for a first-year student, may be beyond contemplation. Also, with higher proportions of the population students of one kind or another, summer and part-time jobs become harder to get. With more graduate students and more students married and with families, costs will be even higher.

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PART FOUR

FUTURE ENROLMENTS AND TEACHER REQUIREMENTS

From the earlier Parts of this report it is clear that future enrolments at the elementary, secondary and post-secondary levels will be determined by the interaction of a large number of dynamic variables: population and birth rates; migration; retention and retardation in school; school organization; teaching techniques; social and demographic factors - to name a few. Not all are capable of quantitative analysis.

In the sections which follow, the starting point is population projections, with some notes on the difficulties of determining what the appropriate school-age groups should be. Populations of the selected age groups are then projected (based on assumptions noted) to 1986.

Elementary and secondary school enrolments are considered together, and forecasts are made to 1986 for each of the Atlantic Provinces. Again, critical assumptions are made. Based on expected enrolments and estimated student-teacher ratios the numbers of teachers required in 1971 and 1976 are projected. Because of the uncertainties surrounding future changes in teaching techniques, no attempt is made to estimate ratios beyond that point. However, the number of teachers needed for later years, assuming student-teacher ratios remain at 1976 levels, is noted. Finally, based on these projections, the annual numbers of new teachers required in each of the Atlantic Provinces are estimated to 1986-87.

Similar procedures are followed in forecasting post-secondary enrolments and teacher requirements, although teacher estimates are limited to full-time places in universities and colleges.

1. POPULATION FORECASTS BY AGE GROUPS

Determination of Appropriate Age Groups

Future elementary and secondary school enrolments are based on the future population 5-19 years of age inclusive.

Enrolment of students 5-14 years of age for the school year 1966-67 as a percentage of the mid-1966 census population of the corresponding age group was 94.3 per cent in Newfoundland, 91.3 per cent in Prince Edward Island, 98.6 per cent in Nova Scotia and 89.9 per cent in New Brunswick.1/ The relatively high percentage in Nova Scotia reflects the existence in that province of a preprimary grade which is attended by more than 90 per cent of five-year-olds. Newfoundland's relatively high percentage among the remaining three provinces reflects some development of kindergarten classes in that province. School attendance is compulsory to age 15 in Newfoundland and Prince Edward Island and to age 16 in Nova Scotia and New Brunswick. However, in the latter two provinces attendance is compulsory only to age 14 in a few rural districts. One factor encouraging continuation beyond the compulsory age is the federal youth allowance for students age 16-18. It is paid only on behalf of those attending school.

In the school year 1966-67 school enrolments of persons 15-19 years of age inclusive as a percentage of the population of the corresponding age group at the mid-1966 census was 47.3 per cent in Newfoundland, 54.3 per cent in Prince Edward Island, 55.0 per cent in Nova Scotia and 52.3 per cent in New Brunswick.1/ In Newfoundland and Nova Scotia, junior matriculation comes at the completion of Grade 11. The modal age for this grade is 16 years. While this is the final school grade in Newfoundland, in Nova Scotia there is a Grade 12 with senior matriculation available at its completion. The modal age for Grade 12 is 17 years. Some students acquire senior matriculation in school while others acquire it in university. In Prince Edward Island and New Brunswick there is no senior matriculation grade, but junior matriculation requires the completion of Grade 12. In both provinces the modal age for this grade is 17 years. In Grades 11 and 12 significant proportions of enrolments are found to be of students one or two years beyond the modal age. Thus, the 15-year age range from 5 to 19 years is required to encompass elementary and secondary school enrolments.

1/ Calculated from Census of Canada and from data supplied by D.B.S. Education Division and Nova Scotia Department of Education, Research Section.

Students characteristically enter post-secondary institutions at age 18 or 19. A first general degree normally requires four years after junior matriculation or three years beyond senior matriculation, and an honours degree an additional year. Master's degrees and doctorates and professional degrees add more years. Teachers' colleges give two-year courses and technical institutes usually two- or three-year courses.

Thus, while the seven-year age range from 18 to 24 years will not cover all full-time post-secondary students, and while many will have completed their education before reaching the upper end of this age range, this bracket appears to be the most reliable base to use when forecasting full-time post-secondary enrolments. Part-time and summertime enrolments cover a very much broader age span, but we do not attempt to forecast these in the present study. The 18-24 range was used by Illing and Zsigmond (1967) and also by Sheffield (1966) for their post-secondary enrolment projections for Canada.

Assumptions Underlying the Population Forecasts

Age-specific fertility rates have been declining for several years, and it is assumed that they will continue to decline to reach a floor in 1971, where they will hold constant for the remainder of the forecast period. It is assumed that, by 1971, they will have declined to 80 per cent of their 1966 level.

Age-specific fertility rates were not available for Newfoundland, but the distribution of ages of females and their ages at marriage could be obtained. This distribution most closely resembles New Brunswick's, although the gross fertility rate is considerably higher in Newfoundland. Therefore, the New Brunswick age-specific fertility rates were raised in the same proportion at all age levels and applied to the Newfoundland distribution of females to produce the estimate of Newfoundland births. This means that each New Brunswick age-specific fertility rate was multiplied by 1.361, and errors may have been introduced if the differences in the ages of conception diverge from the differences in the ages of marriage as between the two provinces.

It was assumed that net migration for each age group will be the average of the rates for 1956-61 and 1961-66.

Survival rates for each age-sex group were taken from the 1960-62 Atlantic Provinces Life Tables except for an upward adjustment for those over 60 years of age in Prince Edward Island and those over 64 years in New Brunswick. These adjustments were made in line with more recent data.

Population Forecasts

Based on the preceding assumptions, Table 4-1 gives forecasts for the school and the post-secondary population of each of the four Atlantic Provinces.

TABLE 4-1

Population 5-19 and 18-24, 1967 Estimates with Forecasts to 1986, Atlantic Provinces

Province & Age Group	1967 Estimates	1971	1976	1981	1986
	----------------	----------------	000	----------------	----------------
Newfoundland					
5-19 years	187.9	192.6	191.9	186.7	187.5
18-24 years	59.8	67.6	73.5	76.5	75.7
Prince Edward Island					
5-19 years	36.6	36.0	33.1	28.9	26.9
18-24 years	11.7	12.5	12.7	13.3	11.8
Nova Scotia					
5-19 years	245.6	244.5	227.0	203.1	188.2
18-24 years	84.9	92.3	96.3	99.3	89.6
New Brunswick					
5-19 years	217.0	213.9	198.8	178.9	167.0
18-24 years	71.6	77.6	80.2	81.7	73.8

In all three Maritime Provinces the school-age population has just about reached its peak (1969), and there is to be a sharp decline after 1971. In Newfoundland, however, the peak is not to occur until 1971 and the decline will not set in until after 1976. In all four Atlantic Provinces the peak in the post-secondary population will be reached in 1981. There will then ensue a sharp decline in each of the three Maritime Provinces but only a slight one in Newfoundland. In each of the Maritime Provinces the 1986 figure is lower than that for 1971.

2. SCHOOL ENROLMENT FORECASTS BY PROVINCE

Assumptions Underlying the School Enrolment Forecasts

Any attempt to forecast separately elementary and secondary school enrolments would be frustrated by the intention of educational authorities to move from a grade promotion to a subject promotion system. Age promotion also appears to be gaining importance. Such an attempt is also discouraged by the intention of certain jurisdictions to change the groupings of grades at each school level.

Enrolment in each of the four Atlantic Provinces as a percentage of the population 15-19 years of age is assumed to rise steadily to 70 per cent by 1986-87. This percentage was reached in British Columbia in 1966-67 and almost reached in that year in Ontario, Saskatchewan and Alberta.[1] Senior matriculation in school is not available in Newfoundland, Prince Edward Island or New Brunswick, and in Nova Scotia also a sizable proportion of senior matriculants is at university. Ontario and British Columbia provide both junior and senior matriculation in school, but in none of the Prairie Provinces is junior matriculation available. Thus, the proportion of Atlantic Region senior matriculants is much above the national average. Assuming that this situation will continue to exist throughout the forecast period, the above-mentioned 20-year gap does not seem unreasonable.

When the level of attendance of the 15-19 age group reaches 70 per cent, the proportions of constituent ages represented should be as follows: 15 years, 97 per cent; 16 years, 93 per cent; 17 years, 90 per cent; 18 years, 60 per cent; and 19 years, 10 per cent. If the population numbers by single years are equal, these percentages will average 70 per cent for the group as a whole. If the population of the group is declining rapidly, as it is expected to do between 1981 and 1986, the proportion may be as low as 68 per cent. A rapidly increasing population could raise the proportion as high as 72 per cent.

With the exception of some loss in New Brunswick at age 14, the differences that occur in the proportion of the 5-14 group enrolled are due to differences in enrolment at age five. The percentages of the 5-14 group enrolled in 1967-68 were: Nova Scotia 98.5 per cent, Newfoundland 94 per cent and Prince Edward Island and New Brunswick each 90 per cent. As more than 90 per cent of five-year olds in Nova Scotia are now enrolled, the percentage of enrolments among the 5-14 group is not expected to increase. In Newfoundland the percentage of this group enrolled is expected to reach the figure for Nova Scotia as kindergarten enrolments increase. The percentages for the 5-14 group in Prince Edward Island and New Brunswick are not expected to rise more than one or two percentage points until the costs of secondary education stabilize and funds become available for kindergarten enrolment.

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[1] Calculated from Census of Canada, and data supplied by D.B.S. Education Division.

In Newfoundland, it is assumed that, by 1986-87, vocational school education for teen-agers will have become integrated with secondary education. In Nova Scotia, enrolments include those in the special vocational schools.

School Enrolment Forecasts

Table 4-2 gives school enrolment forecasts based on the preceding assumptions. The anticipated trends are shown graphically in Figure 4-1.

TABLE 4-2

School Enrolment 1967-68, with Forecasts to 1986-87, Atlantic Provinces

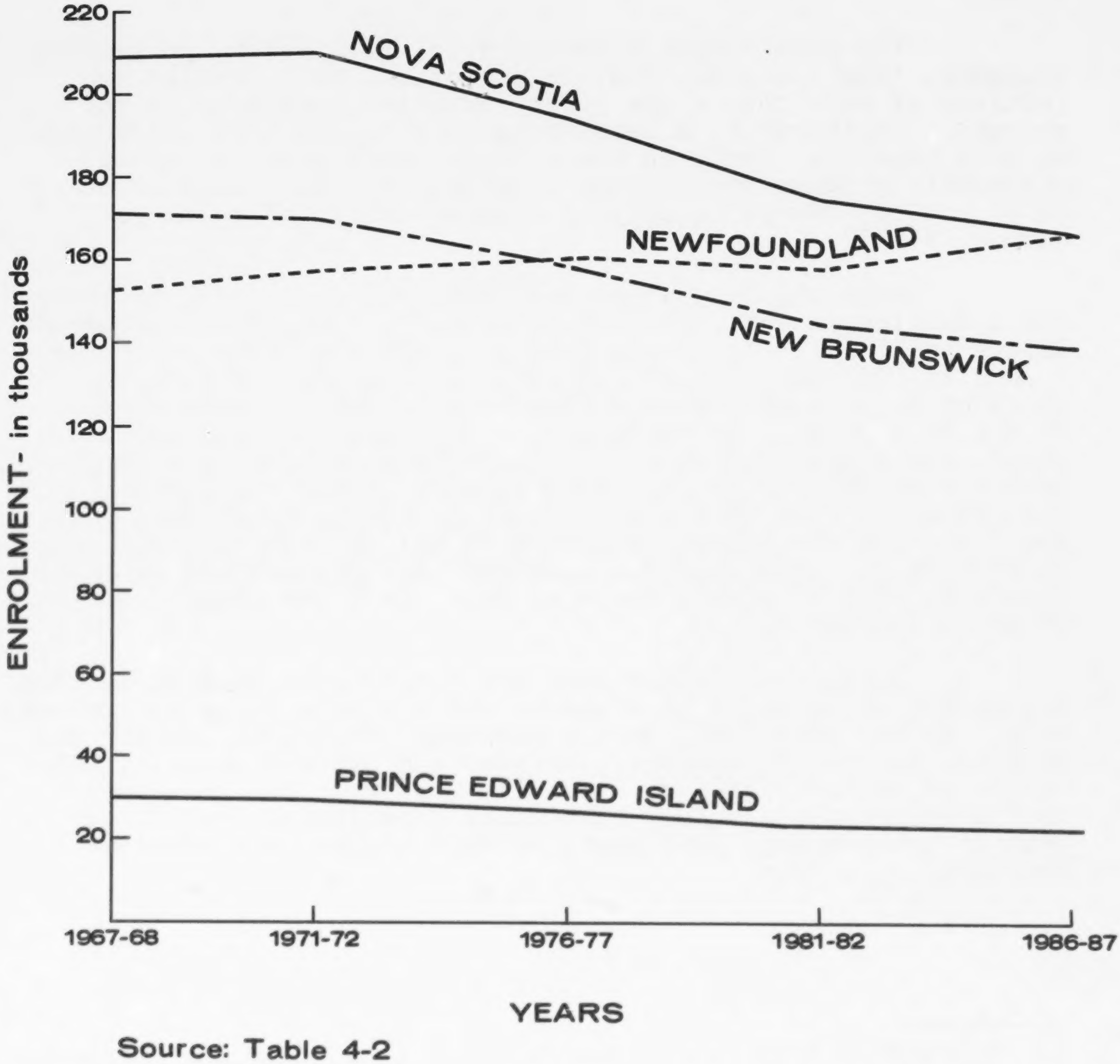
Year	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick
	--------------------	--------------------	000	--------------------
1967-68 Actual*	152.2	29.4	208.6	171.3
1971-72	157.4	29.0	209.5	170.1
1976-77	160.1	26.6	194.1	159.2
1981-82	159.6	23.4	175.0	144.7
1986-87	166.3	22.5	167.3	139.7

* D.B.S. Education Division.

It is apparent that in all three Maritime Provinces total school enrolment is close to its peak at the present time and that from 1971 there will be a relatively steep decline lasting to 1981-82, after which the rate of decrease will moderate. In Newfoundland, the peak is not to be reached until 1976-77 and, after a slight decline during the ensuing five years, there should be a resumption of growth leading to a peak for the entire period in 1986-87.

FIGURE 4-1

FORECAST OF SCHOOL ENROLMENTS
ATLANTIC PROVINCES, 1967-68 TO 1986-87



Source: Table 4-2

3. FUTURE REQUIREMENTS FOR SCHOOL TEACHERS

Student-Teacher Ratios

In Canada, interprovincial differences in student-teacher ratios are fairly broad, but these variations show no correlation with pupils per school in each province. While Newfoundland's ratios have been substantially above the national average, those for the Maritime Provinces have been quite close to it.

The development of educational television, programmed teaching, team teaching, subject promotion, etc., render projections of more than a few years' duration hazardous in the extreme. Furthermore, a least-squares straight-line projection of past negative trends in the student-teacher ratios would ultimately produce unrealistic results. It was therefore decided not to attempt to project future numbers of teachers beyond 1976-77.

Over the 11-year period from 1957-58 to 1967-68 there was a decline in the student-teacher ratio in Newfoundland from 32.1:1 to 25.9:1. In Prince Edward Island the ratio fell from 25.8:1 in 1957-58 to 20.9:1 in 1967-68. During the last two years of this 11-year period there was a sharp decline from 23.0:1 in 1965-66. To avoid an unrealistically steep negative trend, the projection was made on the basis of the nine-year period from 1957-58 to 1965-66. In Nova Scotia the decline in the ratio was from 28.7:1 in 1957-58 to 24.1:1 in 1967-68. In New Brunswick the decline was from 26.8:1 in 1957-58 to 23.5:1 in 1967-68.[1] Least-squares straight-line projections of these trends to 1976-77 give a ratio of about 20:1 for each of the Atlantic Provinces.

Because available data are incomplete, student-teacher ratios had to be based on students and teachers in public schools only. At the same time, school enrolment forecasts are for all schools, including federally-operated and private schools. The effect of this discrepancy is small, however. In the school year 1966-67 public school enrolments constituted over 97 per cent of total school enrolments in each of the four Atlantic Provinces.

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[1] Calculated from D.B.S. Salaries and Qualifications of Teachers in Public Elementary and Secondary Schools, and Survey of Elementary and Secondary Education; and from data supplied by D.B.S. Education Division.

Future Numbers of Teachers

Demand Forecast

In Table 4-3 future numbers of teachers are projected for 1971-72 and 1976-77. Also shown are the numbers which would be required in 1981-82 and 1986-87 were student ratios to remain at the 1976-77 level.

In Newfoundland teacher demand rises to a peak in 1976-77; then, assuming a constant pupil-teacher ratio, it remains on a plateau for the next five years, following which it resumes a much slower rate of advance. In the case of Prince Edward Island, absolute numbers are so small that the trend may become obscured. The table shows a constant level of teacher demand through 1976-77 followed by a decline over the ensuing decade. In Nova Scotia the demand rises to a peak in 1976-77 and then declines during the following 10 years. In New Brunswick the peak demand is reached by 1971-72, but it then remains on a plateau during the following five years before commencing a decline that extends over the 1976-86 decade.

TABLE 4-3

School Teacher Demand 1967-68, with Forecasts to 1976-77

Year	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick
		000		
1967-68 Actual*	5.9	1.4	8.7	7.3
1971-72	6.9	1.4	9.4	7.6
1976-77	8.3	1.4	9.8	7.6
1981-82‡	8.2	1.3	8.8	6.9
1986-87‡	8.6	1.2	8.5	6.7

* D.B.S. Education Division.

‡ Assuming student-teacher ratios unchanged from 1976-77.

Loss Rates

For Newfoundland, it was found that the average annual loss of teachers over the five-year period from 1962-63 to 1966-67 was 25.1 per cent with a range from a high of 26.5 per cent to a low of 23.7 per cent. In Prince Edward Island available data permit only a four-year average for the period from 1963-64 to 1966-67. This gave an average of 13.3 per cent and a range from 14.6 per cent to 11.7 per cent. In Nova Scotia, over the

TABLE 4-4

Teacher Losses by Destination, Atlantic Provinces, 1962-63 to 1965-66

Destination	1962-63	1963-64	1964-65	1965-66
	%	%	%	%
Newfoundland				
Teaching outside the province	5	7	5	n.a.
Administrative post in education	12	10	11	n.a.
Housekeeping (married women only)	15	14	15	n.a.
Other non-teaching activities or occupations	30	25	26	n.a.
Further training (academic or professional)	36	42	41	n.a.
Superannuation, illness or death	2	2	2	n.a.
Total	100	100	100	-
Prince Edward Island				
Teaching outside the province	n.a.	18	23	23
Administrative post in education	n.a.	13	6	2
Housekeeping (married women only)	n.a.	29	26	34
Other non-teaching activities or occupations	n.a.	21	21	14
Further training (academic or professional)	n.a.	13	19	24
Superannuation, illness or death	n.a.	5	4	3
Total	-	100	100	100
Nova Scotia				
Teaching outside the province	23	21	23	28
Administrative post in education	9	7	9	3
Housekeeping (married women only)	37	39	35	35
Other non-teaching activities or occupations	9	11	10	7
Further training (academic or professional)	14	13	14	16
Superannuation, illness or death	8	9	9	11
Total	100	100	100	100
New Brunswick				
Teaching outside the province	n.a.	n.a.	15	n.a.
Administrative post in education	n.a.	n.a.	6	n.a.
Housekeeping (married women only)	n.a.	n.a.	38	n.a.
Other non-teaching activities or occupations	n.a.	n.a.	15	n.a.
Further training (academic or professional)	n.a.	n.a.	17	n.a.
Superannuation, illness or death	n.a.	n.a.	9	n.a.
Total	-	-	100	-

n.a. - not available.

Source: D.B.S. Salaries and Qualifications of Teachers in Public Elementary and Secondary Schools.

five years from 1962-63 to 1966-67, the annual average was 12.1 per cent with a range from 13.7 per cent to 10.7 per cent. In New Brunswick three years, 1964-65 to 1966-67, gave an average of 16.5 per cent and a rather wide range from 21.1 per cent to 14.2 per cent.[1]

Table 4-4 gives a percentage distribution of losses by destination for each of the four provinces.

Newfoundland is shown to have a relatively low percentage of its losses to teaching outside the province and also to housekeeping, the latter, and possibly the former, reflecting the relatively high percentage of males in that province's teaching force. Newfoundland has experienced relatively high losses to non-teaching activities and occupations and also to further training (academic or professional). The latter suggests that, while Newfoundland has a higher rate of annual losses than the Maritime Provinces, there should also be a higher rate of return to the profession after training. Losses to housekeeping, which are relatively high in the Maritimes, appear to an increasing extent not to represent permanent losses to the profession. However, after several years of housekeeping, a woman returning to the profession would require refresher training.

Additional Teachers Required

Total requirements for teachers comprise net increase in numbers plus the replacement of losses. Loss rates for the future in each province are assumed to equal the annual averages shown above. (*See* Table 4-5.)

While the smallness of the absolute numbers may distort trends, it is clear that replacement demand is much larger than incremental demand. It should also be noted that, even in Newfoundland, requirements during the 1971-76 period are not exceeded during the following decade.

Recruitment Sources

In Newfoundland over the five-year period from 1962-63 to 1966-67 the proportion of total teacher recruitment from among teachers in another province or country averaged 3.0 per cent with a range from a high of 3.6 per cent to a low of 2.3 per cent. Recruitment from educational institutions (mainly Memorial University) averaged 77.9 per cent with a range between 81.8 per cent and 69.8 per cent. Recruitment from other occupational activities (including women returning from housekeeping) averaged 19.1 per cent with a range of from 26.6 per cent to 15.6 per cent.

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[1] Calculated from D.B.S. Salaries and Qualifications of Teachers in Public and Elementary Schools, and from data supplied by D.B.S. Education Division.

TABLE 4-5

Annual Average Additions to Teacher Supply, Atlantic Provinces, 1967-68 to 1986-87*

Province and Time Period	Net Increases	Replacement	Total
	-------------	000	------------
Newfoundland			
1967-68 to 1971-72	0.3	1.6	1.9
1971-72 to 1976-77	0.3	1.9	2.2
1976-77 to 1981-82	0.0	2.1	2.1
1981-82 to 1986-87	0.1	2.1	2.2
Prince Edward Island			
1967-68 to 1971-72	0.0	0.2	0.2
1971-72 to 1976-77	0.0	0.2	0.2
1976-77 to 1981-82	0.0	0.2	0.2
1981-82 to 1986-87	0.0	0.2	0.2
Nova Scotia			
1967-68 to 1971-72	0.2	1.1	1.3
1971-72 to 1976-77	0.1	1.2	1.3
1976-77 to 1981-82	-0.2	1.1	0.9
1981-82 to 1986-87	-0.1	1.1	1.0
New Brunswick			
1967-68 to 1971-72	0.1	1.2	1.3
1971-72 to 1976-77	0.0	1.3	1.3
1976-77 to 1981-82	-0.1	1.3	1.2
1981-82 to 1986-87	0.0	1.2	1.2

* Assuming, for the period after 1976-77, that student-teacher ratios remain at the 1976-77 level.

In Prince Edward Island during the four-year period from 1963-64 to 1966-67 the percentage of recruitment from among teachers outside the province averaged 12.4 per cent with a range between 15.2 per cent and 10.2 per cent. Recruitment from educational institutions (mainly within the province) averaged 45.8 per cent with a range between 59.7 per cent and 37.7 per cent. Recruitment from other occupational activities averaged 41.8 per cent with a range between 51.2 per cent and 30.1 per cent.

In Nova Scotia during the five-year period between 1962-63 and 1966-67 the proportion of total teacher recruitment from among teachers outside the province averaged 15.1 per cent with a range between a high of 17.2 per cent and a low of 13.0 per cent. Recruitment from educational institutions (mainly Nova Scotia Teachers' College and universities within the province) averaged 51.5 per cent with a range between 57.7 per cent and 48.1 per cent. Recruitment from other occupational activities averaged 33.4 per cent with a range from a high of 36.3 per cent to a low of 27.4 per cent.

In New Brunswick over the three-year period from 1964-65 to 1966-67 teachers recruited from outside the province averaged 10.4 per cent of the total recruited, with a range between 10.5 per cent and 10.2 per cent. Recruitment from educational institutions (mainly New Brunswick Teachers' College and universities within the province) averaged 60.7 per cent with a range between 61.8 per cent and 58.7 per cent. Recruitment from other occupational activities averaged 29.0 per cent with a range between 31.1 per cent and 27.8 per cent. The range between highs and lows was smaller than in the other provinces, but it should be remembered that, owing to lack of data, the time series consists of only three years compared to five years for Newfoundland and Nova Scotia and four years for Prince Edward Island.1/

In none of the provinces is a trend apparent over these relatively short time series. For purposes of indicating sources of future teacher requirements, it was decided to use the annual average percentages for recent years. This procedure gives the distribution of average annual requirements shown in Table 4-6.

Table 4-6 shows that educational institutions are the main source of teachers. In the late 1970's in Newfoundland, requirements from this source will be smaller than in either the preceding or following period. In the Maritimes, requirements will be less in the late 1970's and early 1980's than in the preceding period. As will appear later, in all four provinces, university and college enrolments (including teachers' colleges) are to rise to or close to their peak by 1981. It

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1/ Calculated from D.B.S. Salaries and Qualifications of Teachers in Public Elementary and Secondary Schools.

TABLE 4-6

Numbers of Annual Teacher Additions by Source Atlantic Provinces, 1967-68 to 1986-87*

Province and Time Period	Total Requirements	Source		
		Teachers from Another Province or Country	Educational Institutions	Other Occupational Activities
	------------------------	------------ 000	------------	------------------------
Newfoundland				
1967-68 to 1971-72	1.9	0.0	1.5	0.4
1971-72 to 1976-77	2.2	0.1	1.6	0.5
1976-77 to 1981-82	2.1	0.1	1.5	0.5
1981-82 to 1986-87	2.2	0.1	1.6	0.5
Prince Edward Island				
1967-68 to 1971-72	0.2	0.0	0.1	0.1
1971-72 to 1976-77	0.2	0.0	0.1	0.1
1976-77 to 1981-82	0.2	0.0	0.1	0.1
1981-82 to 1986-87	0.2	0.0	0.1	0.1
Nova Scotia				
1967-68 to 1971-72	1.3	0.2	0.7	0.4
1971-72 to 1976-77	1.3	0.2	0.7	0.4
1976-77 to 1981-82	0.9	0.1	0.5	0.3
1981-82 to 1986-87	1.0	0.2	0.5	0.3
New Brunswick				
1967-68 to 1971-72	1.3	0.1	0.8	0.4
1971-72 to 1976-77	1.3	0.1	0.8	0.4
1976-77 to 1981-82	1.2	0.1	0.7	0.4
1981-82 to 1986-87	1.2	0.1	0.7	0.4

* Assuming, for the period after 1976-77, that student-teacher ratios remain at the 1976-77 level.

would therefore appear that teacher training may claim a relatively smaller number of the youth population at university in the late 1970's than in either the preceding or the following period. However, to the extent that basic teacher qualifications are raised, this tendency will be offset. After the rapid expansion of enrolments up to 1981, universities may more easily be able to accommodate teachers wishing to return to university to improve their qualifications.

4. FORECASTS OF FULL-TIME POST-SECONDARY ENROLMENTS

Assumptions Underlying the Forecasts

The assumptions underlying these forecasts are discussed in detail in Appendix C. They may be summarized as follows:

1) In universities and colleges (including teachers' colleges) in each of the Atlantic Provinces in 1976-77, it is assumed that foreign students will constitute 5 per cent of total full-time enrolments, and this percentage will hold in 1981-82 and 1986-87. The percentage for 1971-72 is reached through interpolation between the 1967-68 actuals and the 1976-77 forecasts. In 1967-68 the actual percentages were: Newfoundland, 1.4 per cent; Prince Edward Island, 5.7 per cent; Nova Scotia, 8.0 per cent; New Brunswick, 4.9 per cent; and Canada, 5.0 per cent.

2) It is assumed that, by 1976-77, the total number of residents of a given province attending any university or college in Canada will equal total Canadian enrolments in that province. This equality will hold in 1981-82 and 1986-87. The percentages for 1971-72 are reached through interpolation between the 1967-68 actuals and the 1976-77 forecasts. Similarly, residents of a given province enrolled in teachers' colleges are assumed to equal Canadian enrolments in that province's teachers' college throughout the period. In 1967-68 the number of provincial residents at university or college anywhere in Canada as a percentage of Canadian enrolments in the province was: Newfoundland, 113.0 per cent; Prince Edward Island, 121.5 per cent; Nova Scotia, 86.9 per cent; and New Brunswick, 90.0 per cent.

3) It is assumed that the number of provincial residents at university or college anywhere in Canada as a percentage of the provincial population 18-24 years of age in each of the Maritime Provinces will by 1976-77, equal the Canadian average, and this equality will hold in 1981-82 and 1986-87. The percentages for 1971-72 are reached through interpolation between the 1967-68 actuals and the 1976-77 forecasts. In Newfoundland it is assumed that, by 1981-82, the percentage enrolled will be equal to Canada's percentage in 1976-77, and in 1986-87 that province's percentage will equal the Canadian percentage in 1981-82. Percentages for 1971-72 and 1976-77 for Newfoundland are reached through interpolation between the 1967-68 actual and the 1981-82 forecast. The Canadian percentage for 1976-77 is adjusted upward from the projection for 1975-76 by Illing and Zsigmond (1967), which in turn was based on corresponding United States percentages of a decade earlier. Based on the assumptions that Canada will continue to trail the United States by a decade, and that the forecasts for the United States quoted by Illing and Zsigmond will hold, the following percentages of

the population 18-24 enrolled in university or college are projected for Canada: 1976-77, 18.6 per cent; 1981-82, 20.9 per cent; and 1986-87, 23.5 per cent. The actual percentages of the population 18-24 years of age at university in 1967-68 for the Atlantic Provinces and Canada were: Newfoundland, 8.3 per cent; Prince Edward Island, 13.4 per cent; Nova Scotia, 10.5 per cent; New Brunswick, 10.8 per cent; and Canada, 11.8 per cent.

4) By 1975-76, full-time enrolment in post-secondary technician diploma courses at technical institutes is forecast by Illing and Zsigmond (1967) to reach 3.7 per cent of the Canadian population 18-24 years of age. This percentage was adjusted to 3.9 per cent in 1976-77. Based on figures for recent years it was assumed that Newfoundland will trail Canada by five years and that Nova Scotia, New Brunswick and Prince Edward Island will trail Canada by 10 years. The three Maritime Provinces will reach 3.9 per cent of their respective youth populations by 1986-87, and Newfoundland will reach 3.9 per cent of its youth population by 1981-82. Figures for intervening years are reached through interpolation between 3.9 per cent and the 1967-68 actuals. The actual percentages in 1967-68 were: Canada, 1.6 per cent; Newfoundland, 1.1 per cent; Nova Scotia, 0.5 per cent; and New Brunswick, 0.6 per cent.

Forecasts

According to Table 4-7, full-time university and college enrolment in Newfoundland will continue to advance throughout the forecast period, and in 1986-87 will be almost four times as large as in 1967-68. In Prince Edward Island, however, enrolment will reach a peak in 1981-82 and remain on this plateau through 1986-87. In 1981-82 enrolment will be somewhat more than twice as large as in 1967-68. In Nova Scotia, enrolment may be expected to almost reach its peak in 1981-82 but to advance slowly through 1986-87. Between 1967-68 and the 1980's, it will almost double. In New Brunswick also, enrolment will probably near a peak in 1981-82, with a further slow advance through 1986-87. Between 1967-68 and 1981-82 enrolment will almost double, and over the whole period will slightly more than double. Figure 4-2 portrays these projected trends graphically.

Table 4-8 shows full-time enrolment of post-secondary students in technician diploma courses at technical institutes. In Newfoundland, enrolment will continue to rise throughout the period, and in 1981-82 will be almost five times as large as in 1967-68. In Nova Scotia, enrolment is expected to increase six or seven times between 1967-68 and 1981-82, with a further advance through 1986-87. In New Brunswick, 1981-82 enrolment will be five to six times the 1967-68 level and will continue its growth to 1986-87.

TABLE 4-7

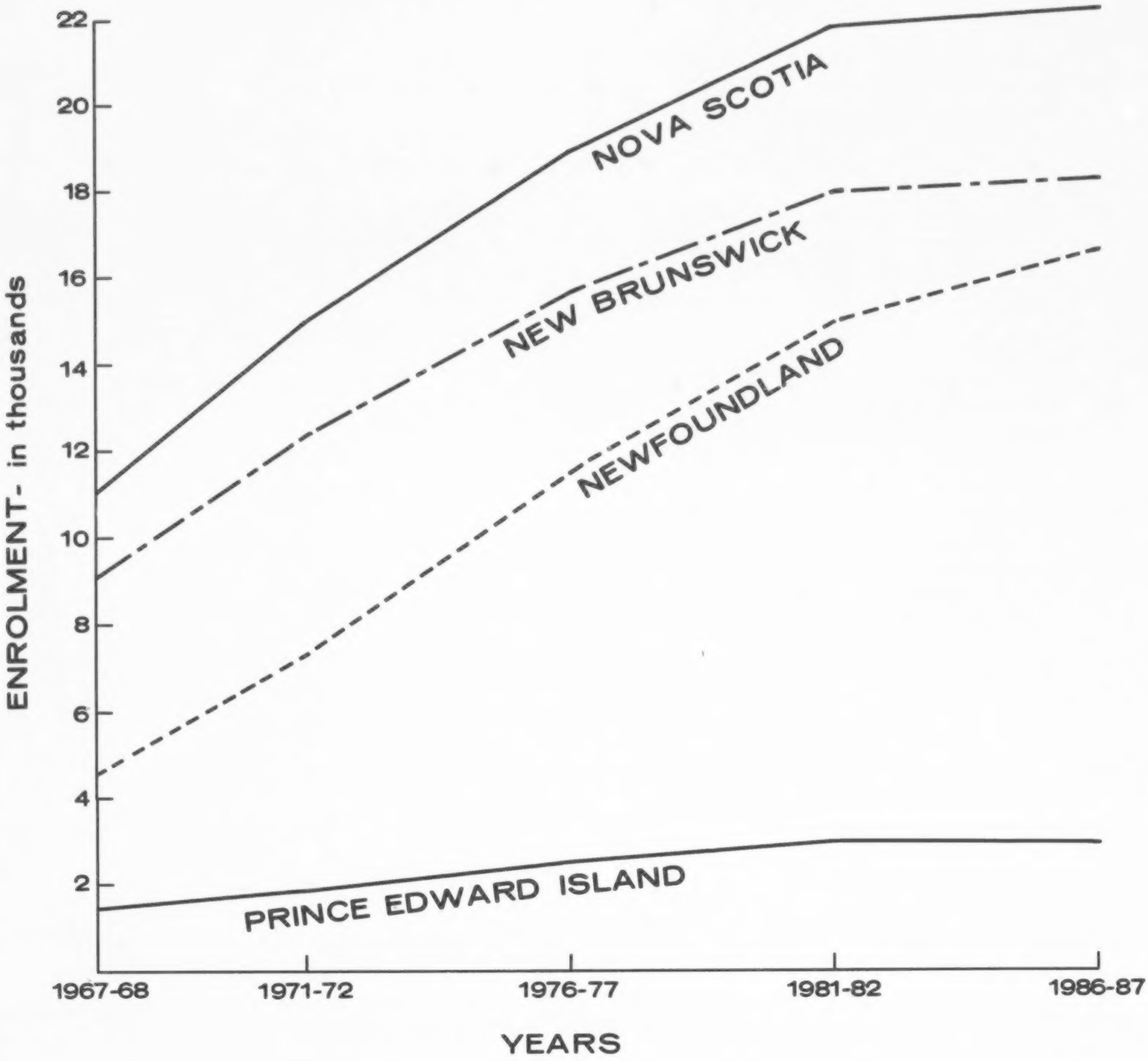
Full-Time Enrolment in Universities and Colleges (Including Teachers' Colleges), Atlantic Provinces, 1967-68 Actual, with Projections to 1986-87

Province and Year	(1) Provincial Residents at University Anywhere in Canada	(2) Total Canadian Enrolment in the Province	(3) Enrolment of Foreign Students in the Province	(4) Total University & College Enrolment in the Province	(5) Population 18-24 Years of Age	(6) Participation Rate (4) as % of (5)
	------------ 000 ------------					%
Newfoundland						
1967-68	5.0	4.4	0.1	4.5	59.8	8.3
1971-72	7.6	7.0	0.2	7.3	67.6	11.2
1976-77	11.0	11.0	0.6	11.5	73.5	14.9
1981-82	14.2	14.2	0.7	15.0	76.5	18.6
1986-87	15.8	15.8	0.8	16.7	75.7	20.9
Prince Edward Island						
1967-68	1.6	1.3	0.1	1.4	11.7	13.4
1971-72	2.0	1.8	0.1	1.9	12.5	15.7
1976-77	2.4	2.4	0.1	2.5	12.7	18.6
1981-82	2.8	2.8	0.1	2.9	13.3	20.9
1986-87	2.8	2.8	0.1	2.9	11.8	23.5
Nova Scotia						
1967-68	8.9	10.3	0.9	11.2	84.9	10.5
1971-72	13.0	14.1	1.0	15.1	92.3	14.1
1976-77	17.9	17.9	0.9	18.9	96.3	18.6
1981-82	20.8	20.8	1.1	21.8	99.3	20.9
1986-87	21.1	21.1	1.1	22.2	89.6	23.5
New Brunswick						
1967-68	7.8	8.6	0.4	9.1	71.6	10.8
1971-72	11.1	11.8	0.6	12.4	77.6	14.3
1976-77	14.9	14.9	0.8	15.7	80.2	18.6
1981-82	17.1	17.1	0.9	18.0	81.7	20.9
1986-87	17.3	17.3	0.9	18.3	73.8	23.5

NOTE: Figures may not add to totals due to rounding.

FIGURE 4-2

FORECAST OF FULL-TIME ENROLMENTS IN UNIVERSITIES AND COLLEGES ATLANTIC PROVINCES, 1967-68 TO 1986-87



Source: Table 4-7

TABLE 4-8

Full-Time Enrolment of Post-Secondary Students in Technician Diploma Courses at Technical Institutes, Atlantic Provinces, 1967-68 Actual and Projections to 1986-87

	Unit	1967-68	1971-72	1976-77	1981-82	1986-87
Newfoundland						
(1) Enrolment	000	0.6	1.3	2.1	3.0	n.a.
(2) Population 18-24	000	59.8	67.6	73.5	76.5	n.a.
(3) Participation Rate: (1) as % of (2)	%	1.1	1.9	2.9	3.9	n.a.
Prince Edward Island						
(1) Enrolment	000	-	0.1	0.2	0.4	0.5
(2) Population 18-24	000	11.7	12.5	12.7	13.3	11.8
(3) Participation Rate: (1) as % of (2)	%	-	0.9	1.9	2.9	3.9
Nova Scotia						
(1) Enrolment	000	0.5	1.1	2.0	3.0	3.5
(2) Population 18-24	000	84.9	92.3	96.3	99.3	89.6
(3) Participation Rate: (1) as % of (2)	%	0.5	1.2	2.1	3.0	3.9
New Brunswick						
(1) Enrolment	000	0.4	1.0	1.8	2.5	2.9
(2) Population 18-24	000	71.6	77.6	80.2	81.7	73.8
(3) Participation Rate: (1) as % of (2)	%	0.6	1.3	2.2	3.1	3.9

In 1981-82, university and college enrolment in Newfoundland is expected to constitute 18.6 per cent of the youth population and enrolment in technical institutes 3.9 per cent, giving a total full-time enrolment in post-secondary education of 22.5 per cent. In the same year, the anticipated percentages for Prince Edward Island are 20.9 per cent and 2.9 per cent respectively, a total of 23.8 per cent. In Nova Scotia, the respective percentages are 20.9 per cent and 3.0 per cent, a total of 23.9 per cent, and in New Brunswick, 20.9 per cent and 3.1 per cent, a total of 24.0 per cent. Thus, Newfoundland will have a somewhat lower percentage of its youth population enrolled in post-secondary education than the Maritime Provinces. Compared to the Maritimes, Newfoundland will have a relatively high proportion of its post-secondary enrolment in technical institutes and a relatively low proportion in universities and colleges.

It should be noted that post-secondary education, as defined here, excludes hospital schools of nursing and post-high school trade courses.

In 1967-68 in Newfoundland, the ratio of university enrolments to technical institute enrolments was 7.5:1, and the ratio of Newfoundlanders enrolled in university anywhere in Canada to technical institute enrolments in Newfoundland was 8:1. The corresponding ratios for Nova Scotia were 22:1 and 18:1 respectively, and for New Brunswick they were 23:1 and 20:1. It is assumed that each province's technical institute enrolment is equal to the number of that province's residents enrolled in technical institutes. Ratio differences for each province represent the unequal inflows and outflows of university students between provinces and the presence of foreign students. By 1986-87, the ratio of university to technical institute enrolments is forecast to be 5:1 in Newfoundland and 7:1 in each of the Maritime Provinces.

Table 4-9 gives the ratio of university to technical institute enrolments in recent years for Canada and Ontario. In both jurisdictions the ratios have been declining and are much lower than in the Atlantic Region, especially the Maritime Provinces.

TABLE 4-9

Ratio of University to Technical Institute Enrolments

Year	Canada	Ontario
1963-64	9:1	9:1
1965-66	8:1	8:1
1967-68	6:1	4:1
1968-69	5:1	3:1

Source: New Brunswick Higher Education Commission. Investing in the Future. Fredericton, January, 1969, p. 49.

A study carried out in 1965 by the Economic Council of Canada indicated that the highest rates of increase in demand for manpower in the five-year period 1965-1970 would occur for university graduates and other post-secondary graduates. University graduates should find a 46-per-cent increase in the demand for their services, and other post-secondary students a 42-per-cent increase. From the second group, graduates of technical institutes would find an 80-per-cent increase in the demand for their services. The study was based on forecasts by 17 companies employing about 5 per cent of the national work force and is not representative of the whole economy, but it is noteworthy that many of the employers not included - governments, the educational system, health and community services, professional firms and partnerships - are the kinds of employers who can be expected to demonstrate even higher levels of demand for professional and semi-professional staff.

The technological changes in our economy make continuous demands for better-trained and more productive manpower, and this is necessarily altering our educational priorities. Wright (1966) described the situation in this way: "In the past, a first degree in engineering could prepare a man for a life's practice, and sub-professional staff could be trained on the job. Today, a first degree can provide only a general kind of education and background .... Sub-professional staff must have formal education and training." He went on to note that graduates from technical institutes formed 38 per cent of the graduating engineers in 1966 while they had formed only 25 per cent of the graduates 10 years earlier.

Starting salaries for technical institute graduates in 1968 were about 15 per cent higher on average than they were the year before, according to the Department of Manpower and Immigration (1968). Graduates in almost all of the 29 specialties listed by the Department could expect to start work at salaries of over $400 per month and in half of the specialties would start at or near the $500 mark.

It is recognized that the application of many branches of technology will be less advanced in the Atlantic Region than in other parts of Canada and that some of the graduates of technicians' courses in the Atlantic Provinces will emigrate, as is the case with some of the graduates of the Region's universities. Concerning this prospect, the views of the New Brunswick Higher Education Commission (1969: p. 51-52) are of interest:

> New Brunswick should focus its efforts on courses which it is particularly suited to offer, regardless of whether the ensuing employment opportunities are now present in this province. Undoubtedly, a number of the graduates of an expanded technical system will move to other parts of the country, as do a large proportion of our university graduates. This is not an acceptable argument,

however, against equipping New Brunswick youth with the kinds of skills they will need. Modern industry requires that education move in parallel with it: if we in this province do not, we will be at an increasing disadvantage. Moreover, to a very considerable extent, employment opportunities create themselves wherever there are well-trained people eager to put their skills to work.

We should also take note of the consequences if we fail to provide enough opportunities for study at the technical level. A very large proportion of the qualified New Brunswick high school graduates now go on to post-secondary studies. But there is only limited scope for students who graduate without university entrance qualifications and (partly in consequence) not enough students stay in high school until completion.

5. FUTURE NUMBERS OF POST-SECONDARY TEACHERS

Student-Teacher Ratios

With the information currently available, the calculation of student-teacher ratios presents formidable problems. Available data on the number of full-time teachers in technical institutes include many who teach both post-secondary students and trade school students. Furthermore, the post-secondary students include both technician diploma students and those taking shorter courses. The only complete data available on enrolments of post-secondary students in technical institutes are for diploma course students. In certain institutions in the Atlantic Provinces there has been a substantial replacement of part-time by full-time teachers, which confuses trends. It was decided, therefore, not to attempt to estimate future numbers of teachers in technical institutes.

The calculation of student-teacher ratios for universities and colleges also presents difficulties. Full-time teaching staff in universities and colleges includes teachers of courses for which junior matriculation is not required. Enrolment data, on the other hand, are confined to post-secondary students. However, this discrepancy is believed not to have a substantial impact on the ratios.

In Prince Edward Island prior to 1965-66, there was a separate teachers' college, but since then all teacher training in the province has been provided at university. The student-teacher ratio has been averaged over the three years subsequent to the closing of the teachers' college. In the other Atlantic Provinces, year-to-year changes in the ratios have fluctuated widely, and trends are not discernible. In the case of all four Atlantic Provinces, therefore, it was decided to base future numbers of teachers on each province's average student-teacher ratio for the three years 1965-66 through 1967-68. These ratios are as follows: Newfoundland, 15.8:1; Prince Edward Island, 14.7:1; Nova Scotia, 12.3:1; and New Brunswick, 14.3:1. For Canada, the most recent three-year period for which the required data are available is the 1963-64 to 1965-66 period, for which the average ratio was 12.9:1. Canadian ratios over the past decade do not yield a clear trend.1/

1/ Illing and Zsigmond (1967); D.B.S. Survey of Higher Education Part II, 1964-65; Canada Year Book (1962-1967); Atlantic Development Board, Stock and Flow ....; Education Division; D.B.S. Census Division.

Forecasts

Table 4-10 gives the number of full-time teachers in universities and colleges (including teachers' colleges) for 1967-68 and projections to 1986-87. Data permitting the calculation of the percentages of teachers leaving the profession in the province are available for only one year, 1967-68, and this particular year is believed not to have been typical in the case of several institutions. Therefore, it was not possible to calculate future teacher requirements.

The number of full-time university and college teachers in Newfoundland will continue to advance through 1986-87, to a level 3.5 times the 1967-68 level. The number of Prince Edward Island teachers will double by 1981-82 and remain there through 1986-87. In Nova Scotia the number of teachers will approach its peak in 1981-82 but will maintain a slow advance through 1986-87. In the early 1980's it will be some 80 per cent above the 1967-68 figure. In New Brunswick also the future number will almost reach its peak in 1981-82 but will continue a slow advance through 1986-87. In the early 1980's it will be over 90 per cent larger than it was in 1967-68.

TABLE 4-10

Full-Time Teachers in Universities and Colleges, (Including Teachers' Colleges), Atlantic Provinces, 1967-68 and Projections to 1986-87

Year	NFLD.	P.E.I.	N.S.	N.B.
	------	------ 000	------	------
1967-68 actual	0.3	0.1	1.0	0.7
Projections:				
1971-72	0.5	0.1	1.2	0.9
1976-77	0.7	0.2	1.5	1.1
1981-82	0.9	0.2	1.8	1.3
1986-87	1.1	0.2	1.8	1.3

6. SUMMARY

During the post-war years all provinces of Canada have been running rapidly to remain in the same place in relation to rapidly rising enrolments. If emigration continues at its recent rates, if urbanization increases and birth rates decline as they have in other provinces, the three Maritime Provinces should, in the years ahead, have an opportunity to consolidate schools and improve the quality of education. The forecast dip in enrolments should make it possible to improve teacher education and pupil programming with relatively small increases in over-all costs.

Newfoundland will continue to have a relatively large child population in relation to the size of its labour force, and school enrolments are to continue to advance through 1986-87. However, age-specific fertility rates in Newfoundland appear to be much higher than in the Maritimes, and they may therefore decline even more dramatically. Should this occur, the problems of improving the quality of education in Newfoundland would be eased.

Educational institutions are the main source of teachers. In Newfoundland in the late 1970's requirements from this source will be smaller than in either the preceding or following period. In the Maritimes, requirements will be less in the late 1970's and early 1980's than in the preceding period. In all four provinces, university and college enrolments (including teachers' colleges) are forecast to rise to or close to their peak by 1981. It would therefore appear that teacher training may draw a relatively smaller proportion of the youth population at university in the late 1970's than in either the preceding or the following periods. However, to the extent that teacher training requirements are increased, this tendency will be offset. After the rapid expansion of enrolments up to 1981, universities may more easily be able to accommodate teachers wishing to return to university to improve their qualifications.

Between the present and the early 1980's university enrolments are expected to increase to about three and one-half times present levels in Newfoundland and to about double in each of the Maritime Provinces. University teacher demand should grow at about the same rates. Enrolments in technical institutes will probably increase significantly more rapidly - by about five times in Newfoundland and by six to seven times in Nova Scotia and New Brunswick. In Prince Edward Island, where technician training has not as yet been inaugurated, an increase of four to five times is forecast for the period between 1971 and the early 1980's. At present the ratio of university to technical institute enrolments in Newfoundland is 7.5:1; in Nova Scotia it is 22:1; and in New Brunswick 23:1. In 1981-82 the ratio for Newfoundland is expected to decline to 5:1, and for each of the Maritime Provinces to about 7:1.

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APPENDIX A

TABLES

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2 Per Cent of Population in Small Communities and in Urban Communities, Canada, Provinces, and Atlantic Subdivisions, 1961 (1951)

3 Some Characteristics of the Male Work Force, Canada, Provinces, and Atlantic Subdivisions, 1961

4 Some Characteristics of the Female Work Force, Canada, Provinces, and Atlantic Subdivisions, 1961

5 Per Cent of Population Migrating, for Canada and Atlantic Provinces and Subdivisions, 1961-66, 1956-61 and 1951-56

6 Population Increases (Per Cent) in Subdivisions of the Atlantic Provinces, by Decades in Census Years, 1881-1961, and 1961-66

7 Percentages of the Population Five Years of Age and Over not Attending School, by Level of Schooling, 1961

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TABLES, cont'd

A-11 Three Measures of Educational Input in Canadian Provinces and Atlantic Subdivisions

12 Seven Measures of Educational Output in Canadian Provinces and Atlantic Subdivisions

13 Correlation Matrix for Twenty-Seven Variables: New Brunswick Counties

14 Correlation Matrix for Twenty-Seven Variables: Newfoundland Census Divisions

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17 Rank Order of Input Variables Significantly Related to Measures of Educational Output, among Prince Edward Island Counties

18 Correlation Matrix for Twenty-Five Variables: Counties and Census Divisions of the Atlantic Provinces

19 Correlation Matrix for Twenty-Seven Variables: Provinces of Canada

TABLE A-1

Size of Families and Households in Canada, the Provinces, and in Subdivisions of the Atlantic Provinces, 1961

Division	% Households with 2 or More Families	Persons per Household	Children per Family	Extra Persons per Household*
CANADA	3.7	3.9	1.9	0.0
NEWFOUNDLAND	7.5	5.0	2.7	0.3
Division 1	7.1	4.9	2.5	0.4
2	5.5	5.0	2.8	0.2
3	10.4	5.2	2.6	0.6
4	5.1	5.6	3.5	0.1
5	7.6	5.3	2.9	0.4
6	9.4	5.5	2.9	0.6
7	9.4	4.7	2.3	0.4
8	6.6	5.1	2.7	0.4
9	8.2	5.6	3.1	0.5
10	5.6	5.0	2.7	0.3
PRINCE EDWARD ISLAND	5.0	4.2	2.2	0.0
Kings	4.4	4.2	2.2	0.0
Prince	4.8	4.4	2.3	0.1
Queens	5.5	4.1	2.0	0.1
NOVA SCOTIA	4.8	4.0	2.0	0.0
Annapolis	2.7	3.6	1.7	-0.1
Antigonish	3.8	5.0	2.9	0.1
Cape Breton	6.0	4.6	2.3	0.3
Colchester	3.7	3.8	1.8	0.0
Cumberland	4.2	3.7	1.8	-0.1
Digby	4.2	3.8	1.9	-0.1
Guysborough	4.4	4.1	2.1	0.0
Halifax	5.2	4.1	1.9	0.2
Hants	3.9	4.0	2.0	0.0
Inverness	5.5	4.6	2.5	0.1
Kings	3.2	3.9	1.9	0.0
Lunenburg	4.7	3.5	1.5	0.0
Pictou	3.5	3.8	1.9	-0.1
Queens	4.8	3.8	1.8	0.0
Richmond	9.0	4.5	2.3	0.2
Shelburne	4.6	3.8	1.9	-0.1
Victoria	4.8	4.2	2.2	0.0
Yarmouth	4.9	3.9	1.9	0.0
NEW BRUNSWICK	4.6	4.4	2.3	0.1
Albert	3.1	4.0	2.0	0.0
Carleton	3.6	4.0	2.0	0.0
Charlotte	3.4	3.5	1.6	-0.1
Gloucester	7.5	5.6	3.2	0.4
Kent	7.7	5.2	2.8	0.4
Kings	2.9	3.7	1.8	-0.1
Madawaska	5.0	5.3	3.1	0.2
Northumberland	6.2	4.8	2.6	0.2
Queens	3.1	3.8	2.0	-0.2
Restigouche	5.7	5.0	2.8	0.2
Saint John	2.8	3.8	1.8	0.0
Sunbury	2.6	4.4	2.4	0.0
Victoria	2.9	4.5	2.6	-0.1
Westmorland	5.2	4.2	2.1	0.1
York	4.3	3.9	1.8	0.1
QUÉBEC	3.3	4.2	2.2	0.0
ONTARIO	4.6	3.7	1.6	0.1
MANITOBA	3.1	3.7	1.7	0.0
SASKATCHEWAN	1.9	3.6	1.8	-0.2
ALBERTA	2.1	3.7	1.8	-0.1
BRITISH COLUMBIA	2.3	3.4	1.6	-0.2

* Other than one average family of two parents plus children.

Source: Derived from Census of Canada, 1961.

TABLE A-2

Per Cent of Population in Small Communities and in Urban Communities, Canada, Provinces, and Atlantic Subdivisions, 1961 (1951)

Division	% Rural Non-Farm		% Urban		% in Places of 10,000 Plus		% in Places of 100,000 Plus	
CANADA	19	(18)	70	(62)	59	(45)	43	(24)
NEWFOUNDLAND	47	(53)	51	(43)	29	(15)	-	-
Division 1	35	(35)	62	(60)	51	(35)	-	-
2	61	(77)	36	(22)	-	-	-	-
3	65	(87)	35	(13)	-	-	-	-
4	50	(40)	43	(25)	-	-	-	-
5	24	(23)	75	(73)	64	-	-	-
6	23	(20)	77	(80)	32	-	-	-
7	71	(81)	27	(17)	-	-	-	-
8	80	(89)	18	(9)	-	-	-	-
9	84	(90)	14	(8)	-	-	-	-
10	56	(100)	44	-	-	-	-	-
PRINCE EDWARD ISLAND	35	(27)	32	(25)	18	(16)	-	-
Kings	44	(25)	15	(13)	-	-	-	-
Prince	44	(35)	24	(17)	-	-	-	-
Queens	22	(22)	47	(37)	40	(37)	-	-
NOVA SCOTIA	38	(29)	54	(54)	44	(28)	38	-
Annapolis	71	(53)	13	(12)	-	-	-	-
Antigonish	45	(19)	30	(27)	-	-	-	-
Cape Breton	15	(16)	83	(79)	81	(56)	-	-
Colchester	38	(38)	49	(37)	46	(34)	-	-
Cumberland	34	(24)	53	(54)	29	-	-	-
Digby	77	(55)	11	(10)	-	-	-	-
Guysborough	70	(57)	17	(18)	-	-	-	-
Halifax	23	(16)	76	(83)	75	(62)	75	-
Hants	63	(49)	20	(20)	-	-	-	-
Inverness	55	(19)	19	(25)	-	-	-	-
Kings	58	(40)	28	(28)	-	-	-	-
Lunenburg	60	(45)	25	(24)	-	-	-	-
Pictou	28	(18)	61	(62)	51	-	-	-
Queens	68	(46)	28	(44)	-	-	-	-
Richmond	89	(78)	-	-	-	-	-	-
Shelburne	74	(66)	24	(30)	-	-	-	-
Victoria	86	(55)	-	-	-	-	-	-
Yarmouth	55	(37)	37	(41)	-	-	-	-
NEW BRUNSWICK	43	(30)	47	(42)	33	(25)	-	-
Albert	58	(72)	31	-	31	-	-	-
Carleton	51	(34)	23	(22)	-	-	-	-
Charlotte	61	(45)	34	(41)	-	-	-	-
Gloucester	70	(39)	20	(10)	-	-	-	-
Kent	65	(40)	11	(5)	-	-	-	-
Kings	58	(25)	19	(38)	6	-	-	-
Madawaska	39	(35)	44	(36)	33	(31)	-	-
Northumberland	62	(40)	30	(25)	-	-	-	-
Queens	71	(63)	12	-	-	-	-	-
Restigouche	40	(27)	51	(45)	29	-	-	-
Saint John	12	(2)	88	(98)	88	(98)	-	-
Sunbury	35	(46)	59	(19)	53	-	-	-
Victoria	53	(42)	27	(20)	-	-	-	-
Westmorland	31	(23)	61	(57)	55	(34)	-	-
York	32	(27)	58	(48)	47	(38)	-	-
QUÉBEC	15	(15)	76	(67)	63	(48)	50	(29)
ONTARIO	15	(15)	77	(71)	67	(55)	48	(28)
MANITOBA	18	(16)	64	(57)	56	(44)	51	(30)
SASKATCHEWAN	24	(22)	43	(30)	27	(20)	12	-
ALBERTA	15	(16)	63	(48)	51	(35)	46	(24)
BRITISH COLUMBIA	23	(23)	73	(68)	63	(55)	53	(30)

Source: Derived from Census of Canada, 1961 and 1951. Since the definition of the various classifications changed slightly, comparisons between 1961 and 1951 should be made with care, especially for subdivisions and where percentages differ only by several points. Generally, the later classifications favour non-farm at the expense of farm, urban at the expense of rural, and larger urban at the expense of smaller urban.

TABLE A-3

Some Characteristics of the Male Work Force, Canada, Provinces, and Atlantic Subdivisions, 1961

Division	% of Population Aged 20-64	Male Labour Force as % of Males 20-64	% Male Work Force in Professions	% Male Wage Earners Regularly Employed*	Annual Average Male Salaries and Wages
CANADA	50.6	101.2	7.6	71.7	$3,679
NEWFOUNDLAND	42.7	86.8	5.4	55.1	2,823
Division 1	44.3	87.4	6.4	62.6	2,977
2	39.8	86.4	3.7	46.6	1,958
3	41.5	92.4	3.3	48.0	1,931
4	37.6	89.2	3.2	53.4	2,651
5	42.2	98.0	5.1	61.7	3,305
6	42.0	100.0	5.6	64.5	3,589
7	43.1	80.3	4.6	28.1	1,873
8	40.6	77.0	4.9	25.6	1,889
9	39.4	75.9	4.8	25.9	1,750
10	51.2	73.1	6.8	76.3	4,175
PRINCE EDWARD ISL.	45.0	106.9	3.9	56.4	2,359
Kings	44.0	105.9	2.3	33.5	1,552
Prince	43.5	107.2	2.8	57.1	2,422
Queens	46.8	107.1	5.3	62.7	2,547
NOVA SCOTIA	47.9	99.5	5.3	69.0	3,021
Annapolis	46.5	113.5	3.0	59.5	2,463
Antigonish	41.3	100.3	7.7	53.9	2,496
Cape Breton	45.7	95.6	4.1	67.4	3,236
Colchester	47.5	102.7	5.0	66.6	2,698
Cumberland	47.5	92.7	4.9	56.3	2,357
Digby	45.8	96.0	3.7	51.2	1,931
Guysborough	44.2	94.2	2.5	44.4	1,904
Halifax	51.5	103.3	7.4	81.1	3,595
Hants	45.7	96.6	4.3	61.5	2,463
Inverness	42.9	99.1	3.6	40.1	2,037
Kings	48.2	102.7	4.7	72.3	2,928
Lunenburg	50.3	98.1	3.6	57.9	2,320
Pictou	46.4	92.6	4.5	60.0	2,622
Queens	48.1	96.4	4.8	61.0	2,784
Richmond	43.3	95.8	3.2	44.9	2,248
Shelburne	45.8	100.5	3.7	60.5	2,056
Victoria	44.6	92.2	3.7	44.8	2,013
Yarmouth	45.9	95.2	4.8	62.9	2,281
NEW BRUNSWICK	45.2	97.4	5.6	61.8	2,807
Albert	47.1	98.5	5.7	73.3	3,375
Carleton	45.1	102.1	3.9	53.9	2,125
Charlotte	48.3	100.2	4.0	60.2	2,328
Gloucester	38.5	90.6	4.4	33.5	2,017
Kent	39.9	93.3	2.3	29.6	1,559
Kings	46.3	102.9	6.0	63.4	2,819
Madawaska	40.9	97.9	5.5	49.9	2,659
Northumberland	42.4	91.6	3.8	54.0	2,406
Queens	45.9	98.6	3.0	59.9	2,377
Restigouche	42.2	92.0	5.3	53.8	2,812
Saint John	50.7	97.3	6.9	75.2	3,303
Sunbury	46.2	108.9	1.4	82.2	3,164
Victoria	42.0	97.7	4.0	44.9	2,154
Westmorland	47.5	97.6	7.1	71.4	3,188
York	49.6	102.3	8.9	67.2	3,059
QUÉBEC	49.9	99.2	-	69.6	3,469
ONTARIO	52.7	103.0	-	75.9	3,984
MANITOBA	50.7	104.1	-	72.0	3,574
SASKATCHEWAN	48.8	106.4	-	67.3	3,290
ALBERTA	50.3	104.1	-	71.6	3,733
BRITISH COLUMBIA	51.7	98.8	-	70.5	4,004

* Regularly employed means at least 40 weeks annually, at least 35 hours weekly.

Source: Derived from Census of Canada, 1961.

TABLE A-4

Some Characteristics of the Female Work Force, Canada, Provinces, and Atlantic Subdivisions, 1961

Division	Female Labour Force as % of Females 20-64	% Female Work Force in Professions	% Female Wage Earners Regularly Employed*	Annual Average Female Salaries and Wages
CANADA	38.6	15.4	59.1	$1,995
NEWFOUNDLAND	25.3	19.8	54.9	1,446
Division 1	31.4	21.3	58.7	1,536
2	17.8	22.6	43.4	1,051
3	16.8	15.7	49.1	892
4	27.6	17.7	49.0	1,495
5	28.2	16.9	55.8	1,403
6	24.8	17.9	55.3	1,511
7	13.8	20.9	42.1	997
8	15.7	19.5	42.6	909
9	14.4	17.7	38.4	829
10	26.8	12.9	63.4	2,432
PRINCE EDWARD ISL.	35.5	19.7	47.4	1,285
Kings	31.0	19.8	24.2	939
Prince	31.8	19.0	45.0	1,215
Queens	40.0	20.2	54.9	1,418
NOVA SCOTIA	33.6	20.3	56.3	1,607
Annapolis	27.1	18.5	47.9	1,376
Antigonish	44.4	32.6	56.2	1,350
Cape Breton	28.9	25.1	54.2	1,574
Colchester	39.7	16.3	57.9	1,484
Cumberland	30.0	17.3	49.1	1,320
Digby	25.6	17.6	45.8	1,204
Guysborough	25.6	19.5	42.9	1,135
Halifax	41.4	19.0	62.4	1,886
Hants	28.0	24.8	56.3	1,425
Inverness	30.7	23.9	38.0	1,144
Kings	30.5	19.7	54.7	1,515
Lunenburg	24.4	17.1	47.7	1,203
Pictou	31.4	22.6	54.6	1,404
Queens	26.2	17.7	46.9	1,249
Richmond	26.0	20.9	44.6	1,270
Shelburne	27.1	16.3	40.3	1,149
Victoria	25.2	28.7	39.9	1,300
Yarmouth	31.4	16.1	53.2	1,253
NEW BRUNSWICK	34.1	19.8	53.4	1,569
Albert	27.0	20.4	56.4	1,661
Carleton	26.7	23.4	48.4	1,348
Charlotte	36.2	14.8	48.7	1,319
Gloucester	29.5	24.0	35.8	1,148
Kent	27.9	19.0	31.3	872
Kings	27.8	21.4	53.9	1,578
Madawaska	33.3	23.9	50.2	1,331
Northumberland	26.2	28.1	48.0	1,446
Queens	21.0	24.6	40.0	1,454
Restigouche	33.4	23.5	55.0	1,499
Saint John	42.5	16.4	61.7	1,795
Sunbury	17.2	16.9	47.6	1,646
Victoria	24.6	26.6	44.7	1,436
Westmorland	41.4	17.2	57.0	1,669
York	38.6	18.9	57.6	1,758
QUÉBEC	36.2	-	62.7	1,920
ONTARIO	42.4	-	59.4	2,119
MANITOBA	41.7	-	58.4	1,902
SASKATCHEWAN	35.3	-	56.9	1,974
ALBERTA	39.5	-	55.8	2,001
BRITISH COLUMBIA	37.6	-	55.5	2,096

* Regularly employed means at least 40 weeks annually, at least 35 hours weekly.

Source: Derived from Census of Canada, 1961.

TABLE A-5

Per Cent of Population Migrating,* for Canada and Atlantic Provinces and Subdivisions, 1961-66, 1956-61 and 1951-56

Division	Net Migration 1961-66	Net Migration 1956-61	Net Migration 1951-56
	%	%	%
CANADA	1.4	3.0	4.3
NEWFOUNDLAND	-5.2	-3.9	0.5
Division 1	-5.8	-1.9	0.9
2	-9.5	-8.6	-3.7
3	-4.4	-6.7	-7.0
4	-17.9	-5.0	-2.7
5	-5.9	-5.7	6.8
6	-3.9	-3.7	6.0
7	-10.1	-10.0	-4.9
8	1.6	-0.3	0.2
9	-10.4	-10.3	-2.8
10	29.2	5.6	21.8
PRINCE EDWARD ISLAND	-4.4	-3.3	-8.2
Kings	-6.0	-6.3	-8.2
Prince	-6.6	-3.6	-10.7
Queens	-1.8	-1.9	-6.0
NOVA SCOTIA	-5.5	-3.3	-1.7
Annapolis	-9.7	-3.0	-7.2
Antigonish	-5.2	-0.5	-2.6
Cape Breton	-9.7	-5.4	-7.4
Colchester	-2.4	-8.6	1.4
Cumberland	-9.2	-10.1	-7.4
Digby	-7.7	-5.1	-7.8
Guysborough	-9.6	-10.4	-10.4
Halifax	-2.4	1.5	9.3
NOVA SCOTIA (cont.)	%	%	%
Hants	-6.9	-3.2	-2.5
Inverness	-8.6	-3.5	-7.8
Kings	-6.1	-1.3	3.3
Lunenburg	-0.8	-2.9	-2.3
Pictou	-3.4	-7.7	-6.3
Queens	-8.1	-3.8	-5.3
Richmond	-9.0	-3.6	-6.9
Shelburne	-1.1	-4.2	-6.3
Victoria	-9.7	-5.7	-8.1
Yarmouth	-5.8	-2.6	-9.1
NEW BRUNSWICK	-5.7	-3.0	-4.0
Albert	3.0	5.1	1.2
Carleton	-7.4	-6.4	-6.3
Charlotte	-3.7	-10.3	-9.2
Gloucester	-5.4	-9.8	-4.4
Kent	-15.0	-13.3	-10.2
Kings	3.7	0.3	1.3
Madawaska	-13.3	-7.5	-7.0
Northumberland	-6.9	-7.0	-3.6
Queens	-12.3	-16.0	-9.6
Restigouche	-10.2	-10.2	-5.7
Saint John	-4.2	0.9	0.3
Sunbury	-2.3	94.3	2.1
Victoria	-10.0	-9.5	-11.6
Westmorland	-6.4	-0.7	-4.5
York	-1.8	1.7	1.0

* The minus sign indicates migration from the area.

Source: 1951-56: K. Levitt, Population Movements in the Atlantic Provinces, Fredericton, N.B., A.P.E.C. 1960; 1956-61: Census of Canada, 1961. 1961-66: Supplied by Census Division, D.B.S.

TABLE A-6

Population Increases (Per Cent) in Subdivisions of the Atlantic Provinces, by Decades in Census Years, 1881-1961, and 1961-66

Division	1871 -1881	1881 -1891	1891 -1901	1901 -1911	1911 -1921	1921 -1931	1931 -1941	1941 -1951	1951 -1961	1961 -1966
CANADA	17	11	11	34	22	18	10	22	30	10
NEWFOUNDLAND									27	8
Division 1									26	5
2									11	4
3									14	10
4									51	5
5									39	8
6									36	11
7									12	-1
8									21	11
9									27	9
10									72	56
PRINCE EDWARD ISLAND	16	*	-5	-9	-5	-1	8	4	6	4
Kings	15	1	-7	-8	-10	-6	1	-8	*	1
Prince	21	6	-3	-7	-4	9	*	9	8	4
Queens	13	-4	-6	-11	-4	2	10	4	7	4
NOVA SCOTIA	14	2	2	7	6	-2	13	11	15	3
Annapolis	14	-6	-3	-1	-2	-10	9	23	4	-5
Antigonish	9	-11	-15	-12	-3	-13	5	14	12	4
Cape Breton	18	10	44	49	18	7	20	9	9	-1
Colchester	15	2	-8	-5	6	-1	20	5	9	4
Cumberland	16	26	5	12	2	-12	9	*	-5	-5
Digby	17	*	2	-1	-3	-6	6	3	1	-2
Guysborough	8	-3	7	-7	-9	*	-1	-8	-7	-3
Halifax	19	5	5	7	21	3	22	32	39	9
Hants	10	-6	-9	-2	*	-2	14	6	13	2
Inverness	10	1	-6	5	-7	-12	-2	-11	2	-3
Kings	9	-4	-2	-1	9	3	19	15	26	4
Lunenburg	20	9	4	3	1	-6	4	1	5	3
Pictou	11	-3	-3	7	14	-4	5	8	*	1
Queens	*	*	-4	-1	-2	7	13	4	5	-3
Richmond	6	-5	-6	-2	-6	-11	-2	-1	5	-1
Shelburne	20	*	-5	-1	-4	-7	6	9	5	7
Victoria	10	*	-15	-6	-10	-11	1	2	1	-3
Yarmouth	15	4	3	2	-4	-6	7	2	5	1
NEW BRUNSWICK	12	*	3	6	10	5	12	13	16	3
Albert	16	-11	*	-11	-11	-11	10	18	26	12
Carleton	17	-4	-4	-1	-2	-1	4	3	5	-1
Charlotte	1	-9	-6	-6	1	*	7	11	-7	1
Gloucester	15	15	12	17	18	8	19	15	15	6
Kent	18	5	*	2	-2	-2	10	4	*	-7
Kings	4	-10	-6	-5	-1	-3	9	4	15	10
Madawaska	20	21	17	35	21	22	15	22	14	-4
Northumberland	25	2	11	9	9	*	13	12	16	3
Queens	1	-13	-8	-3	7	-4	14	3	-12	-6
Restigouche	27	18	27	48	46	31	11	9	13	*
Saint John	2	-6	4	4	13	2	12	8	20	-4
Sunbury	-3	-13	-1	9	-1	14	19	12	145	10
Victoria	59	10	15	31	11	16	12	11	6	*
Westmorland	29	10	1	6	20	8	12	24	17	2
York	12	2	2	*	2	1	12	17	24	11
QUÉBEC										10
ONTARIO										12
MANITOBA										4
SASKATCHEWAN										3
ALBERTA										10
BRITISH COLUMBIA										15

* Denotes change of less than 1.0 per cent.

Source: Derived from Census of Canada.

TABLE A-7

Percentages of the Population Five Years of Age and Over not Attending School, by Level of Schooling, 1961

Division	No Schooling	Having Less than Grade 5	Some University or University Degree
CANADA	5.7	13.4	5.8
NEWFOUNDLAND	11.0	28.8	3.0
Division 1	8.4	21.3	3.8
2	13.9	37.7	1.9
3	17.1	44.5	1.3
4	15.5	34.5	2.5
5	10.4	24.1	3.4
6	8.3	21.4	4.2
7	11.9	37.8	1.4
8	12.5	38.9	1.3
9	16.7	43.6	1.2
10	17.2	33.7	4.5
PRINCE EDWARD ISLAND	6.1	12.3	4.1
Kings	6.3	13.4	2.0
Prince	6.8	14.5	2.8
Queens	5.5	10.1	6.0
NOVA SCOTIA	4.3	11.0	5.0
Annapolis	3.5	8.1	4.7
Antigonish	5.2	12.4	8.7
Cape Breton	4.9	12.5	3.6
Colchester	3.2	7.3	4.4
Cumberland	4.1	10.8	3.6
Digby	4.7	16.3	3.0
Guysborough	6.5	20.9	2.2
Halifax	4.0	8.1	7.5
Hants	4.0	10.3	3.9
Inverness	5.9	19.1	2.9
Kings	4.1	8.9	6.1
Lunenburg	3.7	14.8	2.8
Pictou	3.4	8.9	3.5
Queens	5.2	15.4	3.9
Richmond	7.1	24.3	1.9
Shelburne	3.8	12.5	2.5
Victoria	5.2	14.8	2.7
Yarmouth	4.9	14.2	3.2
NEW BRUNSWICK	8.8	19.0	4.3
Albert	6.6	11.4	5.8
Carleton	6.7	12.4	4.1
Charlotte	5.3	9.7	4.1
Gloucester	15.3	37.7	2.4
Kent	12.8	34.2	1.4
Kings	5.8	11.3	5.8
Madawaska	13.3	30.7	3.9
Northumberland	9.8	21.7	3.1
Queens	6.5	16.1	3.1
Restigouche	14.3	29.3	3.1
Saint John	5.7	10.8	5.0
Sunbury	8.8	16.1	3.3
Victoria	10.4	22.4	4.0
Westmorland	6.8	14.2	5.3
York	5.7	11.0	6.7
QUÉBEC	6.4	17.9	5.2
ONTARIO	3.9	9.0	6.0
MANITOBA	6.6	14.6	5.9
SASKATCHEWAN	7.8	15.5	4.9
ALBERTA	7.0	12.5	6.7
BRITISH COLUMBIA	5.3	9.7	8.0

Source: Derived from Census of Canada, 1961.

TABLE A-8

Distribution, by Type of Industry, of the Male Labour Force, Atlantic Provinces and Subdivisions, 1961

Division	Primary	Secondary	Tertiary
CANADA	17.5	32.3	47.8
NEWFOUNDLAND	23.7	22.8	50.4
Division 1	12.8	23.0	61.3
2	37.8	26.4	31.9
3	33.0	19.7	43.3
4	27.9	15.2	54.8
5	14.9	38.3	44.1
6	19.1	28.4	49.9
7	33.1	24.6	39.0
8	52.5	11.1	31.0
9	61.3	9.7	25.5
10	14.7	13.7	70.8
PRINCE EDWARD ISLAND	41.1	16.6	40.3
Kings	57.2	16.8	24.1
Prince	41.9	14.6	41.2
Queens	34.1	18.1	46.0
NOVA SCOTIA	18.6	24.6	55.1
Annapolis	21.1	16.6	61.0
Antigonish	27.2	24.3	46.5
Cape Breton	30.9	25.5	42.2
Colchester	19.0	27.4	52.0
Cumberland	27.5	26.4	42.8
Digby	27.2	28.2	42.3
Guysborough	37.4	25.9	35.0
Halifax	2.8	19.8	75.8
Hants	28.8	29.0	40.5
Inverness	43.4	18.5	35.3
Kings	20.2	20.6	58.0
Lunenburg	21.9	36.1	40.2
Pictou	22.3	32.4	43.3
Queens	15.2	46.8	36.5
Richmond	24.1	39.1	34.8
Shelburne	36.9	29.8	32.5
Victoria	40.7	13.0	44.8
Yarmouth	23.6	30.0	44.5
NEW BRUNSWICK	20.6	25.9	51.5
Albert	10.8	25.2	62.1
Carleton	40.0	18.9	39.9
Charlotte	25.7	32.3	40.0
Gloucester	38.8	29.1	29.4
Kent	46.2	20.5	31.9
Kings	26.4	27.2	44.4
Madawaska	34.3	24.9	38.2
Northumberland	21.4	23.9	52.5
Queens	41.3	19.9	37.1
Restigouche	24.5	24.6	48.1
Saint John	1.5	34.6	61.8
Sunbury	13.1	4.8	80.4
Victoria	39.1	19.0	40.3
Westmorland	8.7	26.3	63.0
York	17.4	20.6	60.1
QUÉBEC	14.3	36.8	46.0
ONTARIO	12.0	38.5	47.1
MANITOBA	24.2	22.8	50.8
SASKATCHEWAN	45.5	11.9	40.5
ALBERTA	30.0	19.6	48.2
BRITISH COLUMBIA	12.4	31.8	52.9

Source: Derived from Census of Canada, 1961.

TABLE A-9

Percentages of Population Born In and Outside Province of Residence, for Canada, Provinces and Atlantic Subdivisions, 1961

Division	In Their Province	Elsewhere In Canada	Outside Canada
CANADA	74.0	10.4	15.6
NEWFOUNDLAND	96.5	2.1	1.4
Division 1	96.4	1.9	1.7
2	98.8	0.6	0.6
3	98.7	1.0	0.3
4	96.8	2.0	1.2
5	96.5	1.8	1.7
6	95.5	2.9	1.6
7	98.9	0.5	0.6
8	98.7	0.7	0.6
9	99.1	0.3	0.6
10	73.8	21.0	5.2
PRINCE EDWARD ISLAND	89.5	7.6	2.9
Kings	92.1	5.6	2.3
Prince	88.1	9.4	2.5
Queens	89.7	6.9	3.4
NOVA SCOTIA	85.3	10.1	4.6
Annapolis	81.5	12.9	5.6
Antigonish	90.9	4.2	4.9
Cape Breton	88.2	7.5	4.3
Colchester	88.3	7.6	4.1
Cumberland	85.3	10.7	4.0
Digby	93.4	3.7	2.9
Guysborough	94.8	3.2	2.0
Halifax	76.7	17.0	6.3
Hants	92.2	4.3	3.5
Inverness	93.4	3.7	2.9
Kings	80.7	13.6	5.7
Lunenburg	94.1	3.5	2.4
Pictou	88.9	6.9	4.2
Queens	92.7	4.2	3.1
Richmond	94.6	3.7	1.7
Shelburne	93.3	3.9	2.8
Victoria	92.5	4.4	3.1
Yarmouth	93.6	3.5	2.9
NEW BRUNSWICK	86.7	9.4	3.9
Albert	81.6	14.3	4.1
Carleton	90.9	3.8	5.3
Charlotte	86.2	6.5	7.3
Gloucester	96.2	3.0	0.8
Kent	96.7	2.0	1.3
Kings	85.7	8.3	6.0
Madawaska	89.2	7.7	3.1
Northumberland	89.9	7.8	2.3
Queens	90.7	4.4	4.9
Restigouche	86.9	11.5	1.6
Saint John	83.9	10.8	5.3
Sunbury	54.2	38.0	7.8
Victoria	90.8	4.4	4.8
Westmorland	83.9	12.6	3.5
York	85.9	8.4	5.7
QUÉBEC	88.4	4.2	7.4
ONTARIO	69.0	9.3	21.7
MANITOBA	68.7	12.9	18.4
SASKATCHEWAN	71.9	12.0	16.1
ALBERTA	59.2	19.1	21.7
BRITISH COLUMBIA	46.7	27.3	26.0

Source: Derived from Census of Canada, 1961.

TABLE A-10

Percentages of Population in Atlantic Provinces and Subdivisions Speaking French Only, Bilingual, and Roman Catholic

Division	% Speaking Only French	% Bilingual (F. and E.)	% Roman Catholic
CANADA	19.1	12.2	45.7
NEWFOUNDLAND	0.1	1.2	35.7
Division 1	-	0.7	48.5
2	-	0.2	45.6
3	-	0.1	18.1
4	0.5	7.9	76.1
5	-	0.8	29.7
6	-	0.8	29.5
7	-	0.2	9.3
8	-	0.4	9.8
9	-	0.3	15.8
10	2.3	7.2	27.4
PRINCE EDWARD ISLAND	1.2	7.6	46.1
Kings	0.2	1.6	51.9
Prince	2.5	15.3	50.0
Queens	0.3	3.0	40.4
NOVA SCOTIA	0.8	6.1	35.3
Annapolis	0.1	2.6	10.2
Antigonish	0.7	10.9	88.1
Cape Breton	0.1	2.8	59.5
Colchester	0.1	1.4	8.2
Cumberland	0.2	3.2	18.0
Digby	8.0	32.5	54.0
Guysborough	0.5	5.8	38.1
Halifax	0.2	5.1	35.9
Hants	0.1	1.3	10.4
Inverness	9.4	15.7	72.6
Kings	0.1	2.9	12.2
Lunenburg	-	0.9	3.6
Pictou	0.1	2.0	24.8
Queens	0.1	1.2	8.2
Richmond	5.3	46.6	84.1
Shelburne	0.1	1.0	4.7
Victoria	0.1	1.4	38.7
Yarmouth	4.0	31.2	51.6
NEW BRUNSWICK	18.7	19.0	51.9
Albert	0.1	2.4	9.2
Carleton	0.1	1.7	11.4
Charlotte	0.3	3.8	15.6
Gloucester	59.0	29.0	93.3
Kent	45.7	38.1	90.5
Kings	0.1	2.5	14.1
Madawaska	66.5	30.3	97.6
Northumberland	13.2	15.6	59.6
Queens	0.5	5.2	14.1
Restigouche	32.2	35.0	81.4
Saint John	0.7	8.0	38.1
Sunbury	1.3	11.4	33.3
Victoria	17.5	23.4	52.8
Westmorland	10.9	32.9	53.0
York	0.4	4.0	17.1

Source: Derived from Census of Canada, 1961.

TABLE A-11

Three Measures of Educational Input in Canadian Provinces and Atlantic Subdivisions

Division	Per Pupil Expenditure on Teachers' Salaries	Per Cent of All Teachers With 2 Yrs. Training or Less	Per Cent of Elementary Teachers with 2 Yrs. Training or Less
	$	%	%
NEWFOUNDLAND	112	81	92
Division 1	125	73	86
2	97	86	98
3	86	94	98
4	100	92	98
5	110	80	90
6	122	78	91
7	109	87	97
8	93	93	98
9	95	91	98
10	193	69	76
PRINCE EDWARD ISLAND	132	80	91
Kings	137	84	98
Prince	129	80	93
Queens	141	77	85
NOVA SCOTIA	155	54	68
Annapolis	156	63	86
Antigonish	157	60	52
Cape Breton	143	48	62
Colchester	183	59	80
Cumberland	154	68	91
Digby	136	64	81
Guysborough	130	61	85
Halifax	191	42	53
Hants	159	62	79
Inverness	165	60	78
Kings	181	47	65
Lunenburg	137	65	87
Pictou	148	67	85
Queens	145	65	85
Richmond	164	56	75
Shelburne	125	68	94
Victoria	139	60	80
Yarmouth	147	67	84
NEW BRUNSWICK	150	65	80
Albert	159	79	94
Carleton	140	68	88
Charlotte	154	72	91
Gloucester	110	70	84
Kent	102	69	80
Kings	148	80	92
Madawaska	148	53	67
Northumberland	130	68	84
Queens	174	81	92
Restigouche	112	72	88
Saint John	193	54	70
Sunbury	204	61	74
Victoria	150	60	77
Westmorland	167	60	77
York	168	58	76
QUÉBEC	180	-	-
ONTARIO	208	75	95
MANITOBA	181	75	93
SASKATCHEWAN	209	35	45
ALBERTA	239	39	53
BRITISH COLUMBIA	218	36	55

Source: Provincial data were derived from the D.B.S. publications: Salaries and Qualifications of Teachers in Public Elementary and Secondary Schools, 1964-65; and Preliminary Statistics of Education 1965-66. Sub-Provincial data were prepared by Cheal, using, in the case of Newfoundland, a formula prepared by Kitchen for converting electoral district data into census division data.

TABLE A-12

Seven Measures of Educational Output in Canadian Provinces and Atlantic Subdivisions

Division	Retention		Completion		Retardation		
	(1)	(2)	(1)	(2)	(1)	(2)	(3)
NEWFOUNDLAND	43	40	-	-	45	47	26
Division 1	63	76	41	59	23	24	13
2	39	62	20	29	27	32	16
3	26	41	14	27	23	31	14
4	35	54	24	28	33	36	18
5	43	57	29	40	29	27	13
6	63	66	44	44	30	27	13
7	52	73	29	39	23	28	12
8	31	51	19	30	25	30	14
9	37	57	32	34	27	33	16
10	30	31	26	19	29	34	21
PRINCE EDWARD ISLAND	38	43	28	29	40	40	22
Kings	61	39	-	-	26	23	12
Prince	54	33	-	-	19	20	9
Queens	27	33	-	-	20	16	7
NOVA SCOTIA	46	60	24	27	48	46	30
Annapolis	57	41	37	22	27	18	9
Antigonish	54	16	23	8	23	26	12
Cape Breton	58	34	27	18	22	22	14
Colchester	59	34	31	16	18	22	12
Cumberland	62	36	29	21	20	22	14
Digby	55	32	28	17	26	25	16
Guysborough	42	17	10	7	31	29	19
Halifax	59	34	31	20	25	23	14
Hants	57	38	24	12	28	30	17
Inverness	74	45	27	19	20	20	10
Kings	67	34	31	19	20	23	12
Lunenburg	50	33	25	20	27	29	14
Pictou	62	32	25	15	27	21	10
Queens	49	35	30	19	28	30	18
Richmond	60	33	29	22	24	30	14
Shelburne	47	27	12	10	25	24	12
Victoria	60	31	37	17	30	31	18
Yarmouth	46	35	19	18	25	24	12
NEW BRUNSWICK	50	57	29	36	41	41	26
Albert	37	33	31	30	17	15	9
Carleton	57	51	45	46	15	16	7
Charlotte	65	60	53	57	13	20	12
Gloucester	41	36	30	34	23	27	19
Kent	34	35	24	32	27	30	19
Kings	46	50	35	47	17	14	9
Madawaska	48	50	40	47	22	23	14
Northumberland	48	37	38	33	18	21	11
Queens	56	50	42	45	16	20	10
Restigouche	48	42	36	38	23	26	17
Saint John	67	62	58	55	18	21	10
Sunbury	41	41	33	37	22	17	11
Victoria	58	55	39	48	19	21	13
Westmorland	61	50	48	41	22	22	16
York	66	61	51	59	16	15	9
QUÉBEC	40	39	10	7	48	46	26
ONTARIO	52	62	48	54	30	33	13
MANITOBA	72	71	46	40	33	33	19
SASKATCHEWAN	74	81	64	62	27	26	13
ALBERTA	80	82	54	50	28	28	12
BRITISH COLUMBIA	78	79	64	62	34	30	11

NOTE: Reference should be made to the text for the meaning of these measures and for the sources of data.

TABLE A-13

Correlation Matrix for Twenty-Seven Variables: New Brunswick Counties

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
1	100	92	96	86	-59	-27	-36	-47	30	-59	-60	-46	-40	07	63	49	23	34	22	-28	58	-57	-57	48	45	-38	-20	1 Gr. XI, 1965, as % Gr. VII, 1961 (adjusted)
2		100	88	97	-55	-33	-39	-51	32	-57	-60	-38	-39	00	61	47	21	32	39	-19	52	-55	-54	52	50	-42	-30	2 Gr. XII, 1965, as % Gr. VIII, 1961 (adjusted)
3			100	83	-61	-32	-42	-58	45	-63	-62	-47	-41	-03	72	54	37	47	24	-45	66	-62	-62	54	53	-42	-24	3 Pupils passing Gr. XI, 1965, as % Gr. VII, 1961 (adjusted)
4				100	-59	-37	-43	-42	24	-58	-59	-35	-41	02	59	47	17	27	42	-14	49	-54	-52	52	45	-35	-24	4 Pupils passing Gr. XII, 1965, as % Gr. VIII, 1961 (adjusted)
5					100	74	83	-05	12	79	82	73	84	01	-65	-25	-20	-43	-42	18	-07	79	80	-58	-40	-25	-42	5 % Gr. VIII pupils retarded 1 year or more, 1965
6						100	92	20	19	72	76	76	86	47	-69	-30	-57	-72	-77	42	12	78	85	-78	-62	-13	-23	6 % Gr. VII pupils retarded 1 year or more, 1965
7							100	18	-15	74	78	79	87	34	-69	-18	-43	-65	-67	32	16	80	84	-63	-62	-12	-21	7 % Gr. VII boys retarded 2 years or more, 1965
8								100	-91	22	19	18	03	45	-53	-54	-69	-59	-31	70	-57	23	32	-48	-55	75	68	8 % population rural non-farm, 1961
9									100	-23	-19	-20	-06	-54	58	51	81	69	28	-82	52	-25	-33	47	54	-61	-59	9 % population in towns of 10,000 or more
10										100	98	90	91	24	-92	-34	-43	-67	-57	45	-24	97	95	-68	-59	-20	-33	10 Children per family
11											100	92	93	28	-90	-27	-43	-68	-62	41	-14	97	96	-66	-65	-22	-33	11 Persons per household
12												100	93	43	-83	-13	-46	-73	-60	48	05	90	93	-57	-64	-23	-35	12 % French-speaking only
13													100	33	-79	-14	-38	-65	-68	31	11	92	93	-62	-60	-35	-46	13 % Roman Catholic
14														100	-44	17	-64	-77	-71	59	26	29	41	-22	-71	20	22	14 % born in province
15															100	48	70	85	60	-71	39	-91	-93	75	78	-08	04	15 % aged 20-64
16																100	56	31	-03	-51	79	-31	-33	80	15	-29	-16	16 % male work force in professions
17																	100	90	42	-90	32	-46	-57	72	69	-22	-17	17 Average male salaries and wages
18																		100	66	-84	14	-71	-80	67	86	-12	-06	18 % male wage earners regularly employed
19																			100	-26	-23	-63	-68	48	74	-10	-09	19 Male labour force as % males 20-64
20																				100	-45	47	56	-61	-62	30	20	20 % male workers who are in primary industries
21																					100	-17	-16	44	02	-44	-30	21 Female labour force as % females 20-64
22																						100	97	-70	-68	-12	-23	22 % population illiterate
23																							100	-75	-72	-08	-22	23 % population illiterate or functionally illiterate
24																								100	53	-13	01	24 % with some university education, or a degree
25																									100	-31	-31	25 Per pupil expenditure on teachers' salaries, 1965
26																										100	95	26 % teachers with 2 years training or less
27																											100	27 % elementary teachers with 2 years or less.

Decimal points are omitted.

TABLE A-14

Correlation Matrix for Twenty-Seven Variables: Newfoundland Census Divisions

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
1	100	85	88	89	-10	-76	-57	-59	61	-25	-15	-35	52	20	01	43	27	22	41	-44	35	-88	-77	44	09	-50	-18	1 Gr. XI, 1965, as % Gr. VII, 1961 (adjusted)
2		100	61	84	-25	-66	-70	-26	42	-21	-20	-68	54	60	-39	03	-23	-22	29	-06	02	-73	-44	-04	-35	-09	28	2 Gr. X, 1965, as % Gr. VI, 1961 (unadjusted)
3			100	76	14	-57	-29	-58	60	-01	13	-10	49	-06	13	63	47	33	27	-40	45	-70	-76	60	31	-63	-39	3 Pupils passing Gr. XI, 1965, as % Gr. VII, 1961 (adjusted)
4				100	-31	-86	-71	-51	74	-28	-14	-55	74	39	-12	36	08	09	41	-32	33	-85	-69	27	-14	-33	-06	4 Pupils passing Gr. X, 1965, as % Gr. VI, 1961 (unadjusted)
5					100	50	54	-39	05	85	69	35	-17	-28	-14	-06	50	42	25	-21	47	12	-26	43	23	-16	-15	5 % Gr. VIII pupils retarded 1 year or more, 1965
6						100	82	50	-75	60	39	48	-72	-28	-13	-44	-13	-12	-42	39	-21	89	65	-27	05	37	17	6 % Gr. VII pupils retarded 1 year or more, 1965
7							100	20	-47	45	21	84	-58	-73	34	09	35	33	-48	-01	21	69	27	24	56	-20	-40	7 % Gr. VII boys retarded 2 years or more, 1965
8								100	-82	-12	-15	00	-35	13	-17	-33	-73	-80	-78	85	-83	69	91	-81	-29	61	46	8 % population rural non-farm, 1961
9									100	-08	03	-25	73	08	09	44	49	50	63	-62	66	-79	-85	58	10	-53	-37	9 % population in towns of 10,000 or more
10										100	88	06	-13	07	-52	-36	10	09	19	15	26	30	02	05	-17	23	22	10 Children per family
11											100	-12	-06	17	-52	-28	08	04	34	21	13	20	00	02	-26	29	25	11 Persons per household
12												100	-43	-97	77	46	64	54	-46	-35	35	43	01	52	88	-53	-76	12 % French-speaking only
13													100	31	-13	41	08	-06	19	-12	30	-74	-59	17	-14	-23	-07	13 % Roman Catholic
14														100	-87	-63	-75	-64	38	46	-42	-25	15	-65	-96	69	88	14 % born in province
15															100	75	67	57	-31	-55	33	-01	-24	61	90	-74	-89	15 % aged 20-64
16																100	68	47	-23	-44	44	-42	-58	71	78	-87	-85	16 % male work force in professions
17																	100	91	24	-81	81	-30	-72	97	82	-84	-88	17 Average male salaries and wages
18																		100	41	-89	86	-25	-67	92	69	-76	-79	18 % male wage earners regularly employed
19																			100	-49	41	-54	-56	30	-29	-02	12	19 Male labour force as % males 20-64
20																				100	-84	48	77	-85	-59	73	70	20 % male workers who are in primary industries
21																					100	-41	-80	86	51	-68	-66	21 Female labour force as % of females 20-64
22																						100	85	-45	-01	46	17	22 % population illiterate
23																							100	-82	-37	74	54	23 % population illiterate or functionally illiterate
24																								100	78	-90	-86	24 % with some university education or a degree
25																									100	-85	-95	25 Per pupil expenditure on teachers' salaries, 1964-65.
26																										100	91	26 % teachers with 2 years training or less
27																											100	27 % elementary teachers with 2 years or less

Decimal points are omitted.

TABLE A-15

Correlation Matrix for Twenty-Seven Variables: Nova Scotia Counties

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
1	100	57	61	46	-58	-44	-39	-25	23	24	26	31	19	-41	-04	10	22	-03	13	05	22	-07	-18	18	60	-37	-29	1 Gr. XI, 1965, as % Gr. VII, 1961 (adjusted)
2		100	56	76	-30	-39	-31	-07	10	-36	-30	30	-22	-27	36	-21	18	15	25	-14	-22	-26	-19	-20	36	-04	21	2 Gr. XII, 1965, as % Gr. VIII, 1961 (adjusted)
3			100	72	-21	-17	-10	-04	18	-12	-07	-01	-06	-49	29	13	35	16	30	-35	07	-21	-31	25	50	-32	-23	3 Pupils passing Gr. XI, 1965, as % Gr. VII, 1961 (adjusted)
4				100	-28	-26	-24	-05	17	-39	-28	21	-07	-37	47	-10	29	17	20	-40	-20	-09	-05	-10	37	-21	04	4 Pupils passing Gr. XII, 1965, as % Gr. VIII, 1961 (adjusted)
5					100	57	58	47	-31	-17	-21	-20	-15	36	-04	-33	-30	-25	-24	10	-52	18	27	-29	-58	28	28	5 % Gr. VIII pupils retarded 1 year or more, 1965
6						100	80	55	-42	09	10	-11	05	59	-16	-13	-28	-32	-52	13	-36	46	52	-26	-33	10	06	6 % Gr. VII pupils retarded 1 year or more, 1965
7							100	33	-16	-05	-03	-17	-10	34	04	-16	-16	-22	-55	13	-38	37	36	-26	-33	00	09	7 % Gr. VII boys retarded 2 years or more, 1965
8								100	-85	-04	-12	29	00	53	-33	-57	-71	-58	-01	36	-61	42	57	-46	-38	34	42	8 % population rural non-farm, 1961
9									100	-05	09	-30	-00	-54	42	39	75	57	-01	-39	44	-33	-46	26	35	-51	-40	9 % population in towns of 10,000 or more
10										100	97	31	83	24	-81	28	-10	-42	-18	44	38	60	36	27	06	-24	-57	10 Children per family
11											100	29	85	17	-69	31	07	-30	-16	32	40	63	37	29	15	-41	-68	11 Persons per household
12												100	61	37	-41	-24	-44	-53	-14	30	-12	50	59	-31	00	09	03	12 % French-speaking only
13													100	28	-69	16	-14	-46	-26	27	25	72	56	09	04	-24	-51	13 % Roman Catholic
14														100	-58	-45	-73	-71	-57	59	-46	53	73	-65	-67	58	43	14 % born in province
15															100	18	56	73	25	-68	02	-64	-55	15	29	-23	07	15 % aged 20-64
16																100	61	54	10	-54	86	-25	-48	87	53	-35	-68	16 % male work force in professions
17																	100	84	30	-73	51	-36	-58	63	61	-71	-63	17 Average male salaries and wages
18																		100	40	-75	43	-67	-77	55	48	-46	-36	18 % male wage earners regularly employed
19																			100	-36	28	-41	-46	46	44	-26	-18	19 Male labour force as % males 20-64
20																				100	-40	40	46	-53	-57	36	33	20 % male workers who are in primary industries
21																					100	-22	-47	81	66	-39	-67	21 Female labour force as % females 20-64
22																						100	90	-30	-18	-11	-15	22 % population illiterate
23																							100	-58	-40	15	16	23 % population illiterate or functionally illiterate
24																								100	60	-48	-76	24 % with some university education, or a degree
25																									100	-63	-57	25 Per pupil expenditure on teachers' salaries, 1964-65
26																										100	82	26 % teachers with 2 years training or less
27																											100	27 % elementary teachers with 2 years or less

Decimal points are omitted.

TABLE A-16

Correlation Matrix for Twenty-Five Variables: Prince Edward Island Counties

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1	100	66			55	97	90	98	-98	86	61	28	100	19	-98	-100	-74	-79	-66	88	-100	83	91	-100	100	92	98
2		100			99	82	92	50	-50	19	-19	-53	63	87	-50	-63	-99	-98	-100	94	-59	13	28	-65	69	90	79
3																											
4																											
5					100	74	86	38	-38	06	-32	-64	52	92	-38	-52	-97	-95	-99	89	-47	00	15	-55	59	84	70
6						100	98	90	-90	71	40	04	96	43	-90	-96	-88	-92	-82	97	-94	67	78	-97	98	99	100
7							100	80	-80	56	21	-16	88	60	-80	-88	-96	-98	-92	100	-85	51	63	-90	92	100	97
8								100	-100	94	76	47	99	00	-100	-99	-60	-66	-50	77	-99	92	97	-98	97	82	92
9									100	-94	-76	-47	-99	00	100	99	60	66	50	-77	99	-92	-97	98	-97	-82	-92
10										100	93	73	88	-33	-94	-88	-30	-38	-19	51	-91	100	100	-87	84	59	75
11											100	93	64	-65	-76	-64	07	-01	19	16	-69	95	89	-62	58	25	45
12												100	32	-88	-47	-32	43	36	53	-21	-37	77	67	-29	25	-12	09
13													100	16	-99	-100	-71	-77	-63	86	-100	85	92	-100	100	90	97
14														100	00	-16	-80	-75	-87	64	-10	-38	-24	-19	23	57	38
15															100	99	60	66	50	-77	99	-92	-97	98	-97	-82	-92
16																100	71	77	63	-86	100	-85	-92	100	-100	-90	-97
17																	100	100	99	-97	67	-25	-39	74	-77	-95	-86
18																		100	98	-99	73	-32	-46	79	-82	-97	-90
19																			100	-94	59	-13	-28	65	-69	-90	-79
20																				100	-83	46	59	-87	89	100	95
21																					100	-88	-94	100	-99	-88	-96
22																						100	99	-84	81	54	71
23																							100	-91	89	66	81
24																								100	-100	-91	-98
25																									100	93	99
26																										100	98
27																											100

Decimal points are omitted.

1 Gr. XI, 1965, as % Gr. VII, 1961 (adjusted)
2 Gr. XII, 1965, as % Gr. VIII, 1961 (adjusted)
5 % Gr. VIII pupils retarded 1 year or more, 1965
6 % Gr. VII pupils retarded 1 year or more, 1965
7 % Gr. VII boys retarded 2 years or more, 1965
8 % population rural non-farm, 1961
9 % population in towns of 10,000 or more
10 Children per family
11 Persons per household
12 % French-speaking only
13 % Roman Catholic
14 % born in province
15 % aged 20-64
16 % male work force in professions
17 Average male salaries and wages
18 % male wage earners regularly employed
19 Male labour force as % males 20-64
20 % male workers who are in primary industries
21 Female labour force as % females 20-64
22 % population illiterate
23 % population illiterate or functionally illiterate
24 % with some university education, or a degree
25 Per pupil expenditure on teachers' salaries, 1964-65.
26 % teachers with 2 years training or less
27 % elementary teachers with 2 years or less

TABLE A-17

Rank Order of Input Variables Significantly Related to Measures of Educational Output, among Prince Edward Island Counties

	Rank Order on Measures of				
	Retention		Retardation		
	(1)	(2)	(1)	(2)	(3)
Educational Deprivation					
1. % population illiterate					
2. % illiterate or functionally illiterate					
3. % with university education	3				
Proportion of Children in Population					
1. Children per family					
2. Persons per household					
3. % population aged 20-64					
Proportion of Population Urban					
1. % rural non-farm					
2. % in towns of 10,000					
Economic Variables					
1. % male work force in professions	3				
2. Average male salaries and wages		2	2		
3. % male wage earners regularly employed		3	3		
4. Male labour force as % of males 20-64		1	1		
5. Female labour force as % of females 20-64	3				
6. % male work force in primary industries		4	5		1.5
Additional Variables					
1. % population born in province			4		
2. % Roman Catholic	3				
3. % speaking only French					
Educational Variables					
1. Per pupil expenditure on teachers' salaries	3				
2. % teachers with 2 years training or less		5	6		1.5
3. % elementary teachers with 2 years or less				1	

Source: Table A-16.

TABLE A-18

Correlation Matrix for Twenty-Five Variables: Counties and Census Divisions of the Atlantic Provinces

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
1	100		47		-31	-37	-31	-26	23	-44	-45	-16	-13	-13	40	17	11	22	39	-23	42	-64	-61	31	53	-56	-36	1 Gr. XI, 1965, as % Gr. VII, 1961 (adjusted)
2																												
3			100		-37	-25	-06	-16	32	-10	-09	12	02	-23	21	41	38	29	00	-45	17	-05	-14	31	40	-33	-25	3 Pupils passing Gr. XI, 1965, as % Gr. VII, 1961 (adjusted)
4																												
5					100	76	66	20	-15	37	38	-02	27	29	-25	-20	-06	-23	-34	09	-30	25	36	-36	-35	15	11	5 % Gr. VIII pupils retarded 1 year or more, 1965
6						100	82	42	-36	51	54	07	31	50	-36	-16	-22	-44	-68	24	-40	54	67	-52	-44	29	16	6 % Gr. VII pupils retarded 1 year or more, 1965
7							100	32	-22	44	44	34	17	23	-23	-08	-07	-29	-59	10	-21	49	53	-37	-24	01	-02	7 % Gr. VIII boys retarded 2 years or more, 1965
8								100	-83	04	02	05	-08	36	-31	-44	-63	-58	-34	49	-60	21	38	-51	-27	28	35	8 % population rural non-farm, 1961
9									100	-12	-06	-06	16	-39	35	47	65	58	21	-59	47	-22	-32	41	33	-37	-40	9 % population in towns of 10,000 or more
10										100	97	47	61	31	-81	-05	-07	-44	-48	33	-26	82	77	-32	-50	37	08	10 Children per family
11											100	43	67	35	-77	01	-03	-44	-53	29	-29	84	82	-34	-55	40	10	11 Persons per household
12												100	18	09	-41	-04	-16	-33	-08	19	11	42	38	-16	-17	-16	-19	12 % French-speaking only
13													100	41	-52	14	-00	-36	-42	13	-16	41	48	-25	-46	30	11	13 % Roman Catholic
14														100	-55	-11	-59	-70	-40	52	-25	24	45	-49	-76	46	44	14 % born in province
15															100	31	46	68	34	-55	41	-63	-68	48	69	-53	-36	15 % aged 20-64
16																100	59	39	-13	-51	55	-07	-16	70	26	-23	-39	16 % male work force in professions
17																	100	84	12	-80	39	-11	-31	63	53	-34	-41	17 Average male salaries and wages
18																		100	45	-82	47	-45	-63	68	67	-46	-42	18 % male wage earners regularly employed
19																			100	-23	46	-66	-74	47	41	-40	-27	19 Male labour force as % males 20-64
20																				100	-45	31	42	-59	-56	45	42	20 % male workers who are in primary industries
21																					100	-46	-59	71	43	-55	-56	21 Female labour force as % of females 20-64
22																						100	94	-47	-53	55	32	22 % population illiterate
23																							100	-63	-64	58	37	23 % population illiterate or functionally illiterate
24																								100	58	-51	-62	24 % with some university education or a degree
25																									100	-71	-62	25 Per pupil expenditure on teachers' salaries, 1964-65.
26																										100	95	26 % teachers with 2 years training or less
27																											100	27 % elementary teachers with 2 years or less

Decimal points are omitted.

TABLE A-19

Correlation Matrix for Twenty-Seven Variables: Provinces of Canada

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
1	100	95	86	77	-80	-88	-79	-51	30	-71	-74	-41	-71	-88	56	40	65	53	35	14	49	-07	-35	72	79	-22	-10	1 % age 7 boys, 1952-53 reaching Gr. XI by 1964-65
2		100	92	88	-81	-89	-76	-46	26	-79	-82	-50	-75	-86	59	34	61	60	47	15	54	-25	-53	72	81	-17	-04	2 % age 7 girls, 1952-53 reaching Gr. XI by 1964-65
3			100	98	-88	-96	-88	-56	26	-88	-91	-46	-68	-88	66	34	60	58	65	19	68	-40	-68	75	82	-13	-01	3 % age 7 boys, 1952-53 reaching Gr. XII
4				100	-86	-91	-84	-47	23	-86	-87	-48	-67	-83	62	32	56	56	62	15	65	-43	-70	70	77	-06	07	4 % age 7 girls, 1952-53 reaching Gr. XII
5					100	97	92	56	-16	72	70	50	68	74	-54	-32	-55	-46	-57	-33	-60	14	43	-53	-75	-06	-15	5 % Gr. VIII pupils retarded 1 year or more, 1965
6						100	94	60	-20	79	81	45	67	84	-60	-34	-59	-51	-61	-31	-63	21	51	-65	-82	11	01	6 % Gr. VII pupils retarded 1 year or more, 1965
7							100	65	-33	76	76	39	62	86	-65	-51	-69	-51	-48	-14	-59	25	49	-70	-82	12	02	7 % Gr. VII boys retarded 2 years or more, 1965
8								100	-72	76	74	-22	07	65	-89	-74	-80	-83	-58	16	-82	53	56	-72	-83	49	43	8 % population rural non-farm, 1961
9									100	-60	-51	29	-01	-58	85	93	88	86	05	-78	61	-56	-43	74	61	-39	-30	9 % population in towns of 10,000 or more
10										100	98	29	54	87	-91	-55	-77	-84	-68	12	-87	72	85	-86	-84	19	06	10 Children per family
11											100	24	49	88	-86	-48	-71	-78	-73	01	-82	68	84	-86	-86	32	20	11 Persons per household
12												100	92	33	04	28	01	08	-15	-34	-05	03	23	-10	-06	-66	-73	12 % French-speaking only
13													100	63	-26	-04	-34	-23	-19	-19	-25	11	33	-41	-38	-42	-52	13 % Roman Catholic
14														100	-79	-63	-82	-71	-41	17	-68	44	64	-94	-88	26	12	14 % born in province
15															100	81	92	95	49	-40	83	-71	-71	86	84	-39	-28	15 % aged 20-64
16																100	93	81	-02	-68	52	-38	-31	73	72	-47	-38	16 % male work force in professions
17																	100	89	18	-51	64	-45	-47	85	85	-39	-27	17 Average male salaries and wages
18																		100	42	-45	79	-68	-66	80	83	-41	-29	18 % male wage earners regularly employed
19																			100	44	76	-60	-77	40	52	-11	-08	19 male labour force as % males 20-64
20																				100	-15	34	10	-38	-09	15	09	20 % male workers who are in primary industries
21																					100	-71	-81	74	72	-12	-03	21 Female labour force as % of females 20-64
22																						100	92	-61	-45	16	08	22 % population illiterate
23																							100	-72	-62	13	03	23 % population illiterate or functionally illiterate
24																								100	86	-40	-26	24 % with some university education or a degree
25																									100	-51	-40	25 Per pupil expenditure on teachers' salaries, 1965
26																										100	99	26 % teachers with 2 years training or less
27																											100	27 % elementary teachers with 2 years or less

Decimal points are omitted.

APPENDIX B

TABLES

B-1 Per Cent Distribution of Teachers by Teaching Level and Community Size, Atlantic Provinces, 1966-67

2 Distribution of Teachers, Atlantic Provinces, 1966-67

3 Basic Teaching Certificates in Canada

4 Average Salaries, Beginning Elementary Teachers, 1960-61

5 Average Salaries, Beginning Elementary Teachers, 1966-67

6 Average Salaries, Elementary Teachers 4-9 Years Experience, 1960-61

7 Average Salaries, Elementary Teachers 4-9 Years Experience, 1966-67

8 Dollar and Per Cent Increases in Average Salaries, 1961-67

9 Average Salaries, Beginning Secondary Teachers, 1960-61

10 Average Salaries, Beginning Secondary Teachers, 1966-67

11 Average Salaries, Secondary Teachers With 4-9 Years Experience, 1960-61

12 Average Salaries, Secondary Teachers With 4-9 Years Experience, 1966-67

TABLES, cont'd

B-13 Dollar and Per Cent Increases in Average Salaries, Beginning Secondary Teachers, 1961-67

14 Dollar and Per Cent Increases in Average Salaries, Secondary Teachers 4-9 Years Experience, 1961-67

15 Newfoundland Interim Salary Scale (Dollars), 1967-68

16 New Brunswick Memorandum of Agreement

17 Salary Scale (A) County of Leduc No. 25 (Alberta), (B) Calgary Roman Catholic Separate School District No. 1

18 Salary Scale (A) Medicine Hat School District No 76, (B) County of Newell No. 4

TABLE B-1

Per Cent Distribution of Teachers by Teaching Level and Community Size, Atlantic Provinces, 1966-67

Community Size	All Teachers			Elem.	Elem.-Sec.	Sec.
	M	F	T	T	T	T
Nfld.						
Rural*	52.5	43.2	46.5	35.2	62.1	34.7
1,000 - 9,999	29.7	32.7	31.6	38.7	23.4	36.3
10,000 +	17.8	24.1	21.9	26.1	14.5	29.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
P.E.I.						
Rural*	41.6	65.2	60.3	65.3	36.8	48.9
1,000 - 9,999	32.7	21.7	24.0	20.6	13.2	34.8
10,000 +	25.7	13.1	15.7	14.1	50.0	16.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
N.S.						
Rural*	38.4	41.7	40.9	42.6	42.3	33.7
1,000 - 9,999	27.3	23.9	24.7	23.3	28.2	27.4
10,000 +	34.3	34.4	34.4	34.1	29.5	38.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
N.B.						
Rural*	37.9	47.6	45.1	50.1	42.0	35.9
1,000 - 9,999	28.7	27.7	28.0	26.1	28.2	31.5
10,000 +	33.5	24.6	26.9	23.8	29.8	32.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Atlantic						
Rural*	43.1	48.5	44.9	44.8	47.2	35.9
1,000 - 9,999	28.8	22.2	27.5	27.6	26.7	31.3
10,000 +	28.1	23.3	27.6	27.6	26.0	32.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

* Less than 1,000

Source: D.B.S. unpublished data.

TABLE B-2

Distribution of Teachers, Atlantic Provinces, 1966-67

Province		All Schools			Elementary			Elem.-Sec.			Secondary		
		M	F	T	M	F	T	M	F	T	M	F	T
					All rural schools								
Nfld.	no.	1,043	1,582	2,625	524	1,387	1,911	297	108	405	222	87	309
	%	39.7	60.3	100.0	27.4	72.6	100.0	73.3	26.7	100.0	71.8	28.2	100.0
P.E.I.	no.	113	682	795	36	584	620	4	9	13	73	89	162
	%	14.2	85.8	100.0	5.8	94.2	100.0	30.7	69.2	100.0	45.1	54.9	100.0
N.S.	no.	740	2,006	2,746	241	2,083	2,324	242	222	464	257	241	498
	%	26.9	73.1	100.0	10.4	89.6	100.0	52.2	47.8	100.0	51.6	48.4	100.0
N.B.	no.	659	2,469	3,128	242	2,083	2,325	165	147	312	252	239	491
	%	21.1	78.9	100.0	10.4	89.6	100.0	52.9	47.1	100.0	51.3	48.7	100.0
					Centres of 1,000 - 9,999								
Nfld.	no.	590	1,195	1,785	262	1,047	1,309	108	45	153	220	103	323
	%	33.1	66.9	100.0	20.0	80.0	100.0	70.6	29.4	100.0	68.1	31.9	100.0
P.E.I.	no.	189	227	316	28	168	196	3	2	5	58	57	115
	%	28.2	71.8	100.0	14.3	85.7	100.0	60.0	40.0	100.0	50.4	49.6	100.0
N.S.	no.	526	1,460	1,986	140	1,132	1,272	161	149	310	225	179	404
	%	26.5	73.5	100.0	11.0	89.0	100.0	51.9	48.1	100.0	55.7	44.3	100.0
N.B.	no.	449	1,439	1,938	116	1,095	1,211	110	199	309	273	245	518
	%	25.7	74.3	100.0	9.6	90.4	100.0	35.6	64.4	100.0	52.7	47.3	100.0
					Centres of 10,000 - 999,999								
Nfld.	no.	353	881	1,234	150	731	881	53	42	95	150	108	258
	%	28.6	71.4	100.0	17.0	83.0	100.0	55.8	44.2	100.0	58.1	41.9	100.0
P.E.I.	no.	170	137	207	25	109	134	10	9	19	35	19	54
	%	33.8	66.2	100.0	18.7	81.3	100.0	52.6	47.4	100.0	64.8	35.2	100.0
N.S.	no.	660	2,101	2,761	201	1,661	1,862	164	160	324	295	280	575
	%	23.9	76.1	100.0	10.8	89.2	100.0	50.6	49.4	100.0	51.3	48.7	100.0
N.B.	no.	583	1,278	1,861	122	982	1,104	131	90	221	330	206	536
	%	31.3	68.7	100.0	11.1	88.9	100.0	59.3	40.7	100.0	61.6	38.4	100.0

__Source__: Derived from D.B.S. unpublished data.

TABLE B-3

Basic Teaching Certificates in Canada

The following chart lists the basic teaching certificates currently issued in Canada according to the approximate minimum years of training required above Junior Matriculation. The data are based on an analysis of regulations obtained from the provincial departments of education. Only those certificates conveying general teaching authority are recorded. Certificates to the left of the heavy line cannot be made permanent.

Basic Certificates Offered in Canada by Approximate Minimum
Years of Training Above Junior Matriculation

Province	Approximate Minimum Years of Training Above Junior Matriculation							
	1	2	3	4	5	6	7	8
Nfld.	Grade 1 A Licence	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
P.E.I.	Cert. A	Cert. I	Cert. II	Cert. III	Cert. IV	Cert. V		
N.S.			Teacher's Licence Class I	Prof. Cert. Class III	Prof. Cert. Class II	Prof. Cert. Class I		Prof. Cert. Class IA
N.B.	Teacher's Licence	Cert. I Cert. II	Cert. III	Letter of Standing IV	Cert. V	Cert. V	Cert. VI	
Man.		First Class			Collegiate			
Sask.		Interim Standard	Standard A		Prof. A			
Alta.			Standard Elementary ---- Standard Secondary	Prof.				
B.C.	Elementary C	Elementary B	Elementary A	Prof. C	Prof. B	Prof. A		

Cert. = Certificate

Prof. = Professional

Source: Research Division, Canadian Teachers' Federation, Ottawa.

TABLE B-4

Average Salaries, Beginning Elementary Teachers, 1960-61

(Dollars)

Province or Region	Level 1				Level 2-3				Level 4-7			
	U*	R‡	T	U-R	U	R	T	U-R	U	R	T	U-R
Nfld.	2,368	2,426	2,393	-58	2,823	2,872	2,837	-49	3,655	-	3,655	-
P.E.I.	2,053	1,975	1,986	+78	2,506	2,413	2,495	+93	-	-	-	-
N.S.	1,881	1,760	1,812	+121	2,310	2,118	2,237	+192	3,696	3,427	3,648	+269
N.B.	2,073	1,974	1,944	+99	2,348	2,093	2,263	+255	4,074	3,380	3,948	+694
Atlantic	2,094	2,009	2,044	+85	2,497	2,374	2,453	+123	3,808	3,404	3,753	+404
Man.	2,885	2,626	2,662	+259	3,071	2,866	2,962	+205	4,233	2,750	3,862	+1,483
Sask.	-	2,542	2,542	-	2,917	2,765	2,815	+152	4,388	2,700	3,739	+1,688
Alta.	-	-	-	-	3,047	3,071	3,058	-24	4,286	3,998	4,236	+288
B.C.	3,012	3,065	3,033	-53	3,594	3,538	3,576	+56	4,530	4,524	4,530	+06
Western	2,948	2,744	2,746	+204	3,157	3,060	3,103	+97	4,359	3,493	4,092	+866
Differences												
W-A	+854	+735	+702		+660	+686	+650		+551	+89	+339	
%	40.8	36.6	34.3		26.4	29.0	26.5		14.5	2.6	9.0	

*U = Urban ‡R = Rural

Source: Derived from D.B.S. Salaries and Qualifications of Teachers 1960-61, 1964-65, p. 36 - 37.

TABLE B-5

Average Salaries, Beginning Elementary Teachers, 1966-67

(Dollars)

Province or Region	Level 1				Level 2-3				Level 4-7			
	U*	R‡	T	U-R	U	R	T	U-R	U	R	T	U-R
Nfld.	2,663	2,680	2,670	-17	3,169	3,472	3,258	-303	4,271	4,811	4,364	-540
P.E.I.	3,000	2,621	2,675	+379	3,431	2,993	3,139	+438	4,163	3,350	4,000	+813
N.S.	2,280	2,380	2,335	-100	3,339	3,165	3,261	+174	4,936	4,730	4,893	+206
N.B.	2,977	2,413	2,789	+564	3,179	3,007	3,106	+172	4,534	4,166	4,425	+368
Atlantic	2,681	2,644	2,664	+37	3,246	3,083	3,174	+163	4,725	4,514	4,678	+211
Man.	3,411	3,349	3,380	+62	3,489	3,284	3,410	+205	5,262	-	5,262	-
Sask.	-	-	-	-	3,803	3,517	3,659	+286	5,776	5,875	5,786	-99
Alta.	-	-	-	-	4,791	4,194	4,572	+597	5,385	5,091	5,367	+294
B.C.	3,613	3,647	3,631	-34	4,379	4,294	4,349	+85	5,232	5,282	5,247	-50
Western	3,465	3,445	3,455	+20	4,064	3,751	3,970	+313	5,363	5,267	5,352	+96
Differences												
W-A	+784	+801	+791		+818	+668	+796		+638	+753	+674	
%	29.2	30.3	29.7		25.2	21.7	25.1		13.5	16.7	14.4	

*U = Urban ‡R = Rural

Source: Derived from D.B.S. unpublished data.

TABLE B-6

Average Salaries, Elementary Teachers 4-9 Years Experience, 1960-61

(Dollars)

Province or Region	Level 1				Level 2-3				Level 4-6			
	U*	R‡	T	U-R	U	R	T	U-R	U	R	T	U-R
Nfld.	2,947	2,959	2,951	-12	3,639	3,773	3,663	-134	4,382	4,570	4,410	-188
P.E.I.	2,695	2,324	2,434	+371	3,017	2,756	2,959	+261	3,592	-	3,432	-
N.S.	2,511	2,365	2,429	+146	3,106	2,818	2,985	+288	4,468	4,054	4,381	+414
N.B.	2,727	2,279	2,509	+448	2,963	2,602	2,833	+361	4,163	3,668	3,982	+495
Atlantic	2,720	2,482	2,581	+238	3,181	2,987	3,110	+194	4,151	4,097	4,051	+54
Man.	3,716	3,067	3,192	+649	3,844	3,333	3,677	+511	5,493	3,167	5,387	+2,326
Sask.	3,310	2,969	3,048	+341	3,967	3,868	3,904	+99	5,305	4,430	5,137	+875
Alta.	4,019	4,152	4,101	-133	4,243	4,241	4,242	+2	5,409	5,660	5,447	-251
B.C.	3,706	3,784	3,744	-78	4,690	4,654	4,681	+36	5,889	6,257	5,920	-368
Western	3,688	3,493	3,521	+195	4,186	4,024	4,126	+162	5,524	4,881	5,473	+643
Differences												
W-A	+968	+1,011	+940		+1,005	+1,037	+1,016		+1,373	+784	+1,422	
%	35.6	40.7	36.4		31.6	34.7	32.7		33.1	19.1	35.1	

*U = Urban ‡R = Rural

Source: Derived from D.B.S. Salaries and Qualifications of Teachers, p. 40-4.

TABLE B-7

Average Salaries, Elementary Teachers 4-9 Years Experience, 1966-67

(Dollars)

Province or Region	Level 1				Level 2-3				Level 4-7			
	U*	R‡	T	U-R	U	R	T	U-R	U	R	T	U-R
Nfld.	3,540	3,596	3,557	-56	4,344	4,802	4,441	-458	5,509	6,324	5,725	-815
P.E.I.	3,509	3,084	3,176	+425	4,156	3,762	4,012	+394	5,406	4,525	5,308	+881
N.S.	3,124	3,058	3,092	+66	3,963	3,772	3,889	+191	6,145	5,865	6,079	+280
N.B.	3,248	2,969	3,109	+279	4,087	3,792	3,947	+295	5,997	5,318	5,784	+679
Atlantic	3,394	3,179	3,297	+215	4,053	3,804	3,963	+249	6,010	5,814	5,962	+196
Man.	4,749	3,946	4,269	+803	4,622	4,066	4,465	+556	7,017	6,058	6,933	+959
Sask.	4,300	3,557	3,650	+743	4,976	4,851	4,915	+125	7,422	6,418	7,311	+1,004
Alta.	4,799	4,895	4,848	-96	5,015	5,225	5,076	-210	6,832	7,370	6,896	-538
B.C.	3,960	4,218	4,108	-258	5,651	5,553	5,622	+98	6,889	6,751	6,865	+138
Western	4,372	4,165	4,271	+207	5,130	4,996	5,085	+134	6,922	6,878	6,917	+44
Differences												
W-A	+978	+986	+974		+1,077	+1,192	+1,122		+912	+1,064	+955	
%	28.8	31.0	29.5		26.6	31.3	28.3		15.2	18.3	16.0	

*U = Urban ‡R = Rural

Source: Derived from D.B.S. unpublished data.

TABLE B-8

Dollar and Per Cent Increases in Average Salaries, 1961-67

A. Beginning Elementary Teachers

Province or Region	Level 1				Level 2-3				Level 4-6			
	U*	R‡	Total		U	R	Total		U	R	Total	
	%	%	%	$	%	%	%	$	%	%	%	$
Nfld.	12.5	10.5	11.6	277	12.3	20.9	14.8	421	16.9	-	19.4	709
P.E.I.	46.1	32.7	34.7	689	36.9	24.0	25.8	644	-	-	-	-
N.S.	21.1	35.2	28.9	523	44.5	49.4	45.8	1024	33.5	38.0	34.1	1245
N.B.	43.6	22.2	43.5	845	35.4	43.7	37.3	843	11.3	23.3	12.1	477
Atlantic	28.0	31.6	30.3	620	30.0	29.9	29.4	721	24.1	32.6	24.6	925
Man.	18.2	28.7	27.0	718	13.6	14.6	15.1	448	24.3	-	36.3	1400
Sask.	-	-	-	-	30.4	27.2	30.0	844	31.6	117.6	54.7	2047
Alta.	-	-	-	-	57.2	36.6	49.5	1514	25.5	27.3	26.7	1131
B.C.	20.0	18.5	19.7	598	21.8	21.4	21.6	773	15.6	16.8	15.8	717
Western	17.5	25.9	25.8	709	28.7	22.6	27.9	867	23.0	50.8	30.8	1260

B. Elementary Teachers 4-9 Years Experience

	Level 1				Level 2-3				Level 4-6			
	U	R	Total		U	R	Total		U	R	Total	
	%	%	%	$	%	%	%	$	%	%	%	$
Nfld.	20.1	21.5	20.5	606	19.4	27.3	21.2	778	25.7	38.4	29.8	1315
P.E.I.	30.2	32.7	30.5	742	37.8	36.5	35.6	1053	50.5	-	54.7	1876
N.S.	24.4	29.3	27.3	663	27.6	33.9	30.3	904	37.5	44.7	38.8	1698
N.B.	19.1	30.3	23.9	600	37.9	45.7	39.3	1114	44.1	45.0	45.3	1802
Atlantic	24.8	28.1	27.7	716	27.4	27.4	27.4	853	44.8	41.9	47.2	1911
Man.	27.8	28.7	33.7	1077	20.2	22.0	21.4	788	27.7	91.3	28.7	1546
Sask.	29.9	19.8	19.8	602	25.4	25.4	25.9	1011	39.9	44.9	42.3	2174
Alta.	19.4	17.9	18.2	747	18.2	23.2	19.7	834	26.4	30.2	26.6	1449
B.C.	6.9	11.5	9.7	364	20.5	19.3	20.1	941	17.0	7.9	16.0	945
Western	18.5	19.2	21.3	750	22.6	24.2	23.2	959	25.3	40.9	26.4	1444

*U = Urban ‡R = Rural

Source: Tables B-4 through B-7.

TABLE B-9

Average Salaries, Beginning Secondary Teachers, 1960-61

(Dollars)

Province or Region	Levels 2-3				Levels 4-6				All Levels
	U*	R‡	T	U-R	U	R	T	U-R	T
Nfld.	3,072	-	3,072	-	3,782	3,680	3,766	+102	2,961
P.E.I.	-	3,525	3,720	-	3,550	-	3,480	-	3,261
N.S.	2,331	2,143	2,253	+188	3,713	3,391	3,574	+322	3,059
N.B.	2,952	2,799	2,842	+153	3,882	3,606	3,787	+276	3,066
Atlantic	2,785	2,822	2,972	-37	3,758	3,559	3,652	+199	3,087
Man.	3,267	3,833	3,380	-566	4,342	4,175	4,329	+167	3,990
Sask.	3,428	3,142	3,235	+286	4,628	4,266	4,530	+362	3,930
Alta.	3,890	3,691	3,824	+199	4,537	4,502	4,530	+35	4,082
B.C.	4,136	4,051	4,104	+85	4,761	4,665	4,750	+96	4,420
Western	3,680	3,679	3,636	+1	4,567	4,407	4,535	+160	3,856
W-A	+895	+857	+664		+809	+848	+883		+769
W-A as % of A	32.1	30.4	22.3		21.5	23.8	24.2		24.9

*U = Urban ‡R = Rural

Source: Derived from D.B.S. Salaries and Qualifications 1960-61, p. 36-37

TABLE B-10

Average Salaries, Beginning Secondary Teachers, 1966-67

(Dollars)

Province or Region	Levels 2-3				Levels 4-7				All Levels
	U*	R‡	T	U-R	U	R	T	U-R	T
Nfld.	3,267	3,226	3,248	+41	4,451	4,819	4,550	-368	3,478
P.E.I.	3,300	3,500	3,407	-200	4,064	4,186	4,132	-122	3,814
N.S.	3,510	3,442	3,476	+68	4,888	4,770	4,846	+118	4,205
N.B.	3,590	3,486	3,536	+104	4,867	4,625	4,788	+242	4,135
Atlantic	3,499	3,442	3,470	+57	4,776	4,655	4,733	+121	4,036
Man.	4,372	4,454	4,398	-82	5,376	5,500	5,380	-124	4,823
Sask.	4,263	4,051	4,134	+212	5,936	5,680	5,843	+256	5,151
Alta.	3,881	4,470	4,003	-589	4,990	5,415	5,105	-425	4,434
B.C.	5,055	4,903	5,018	+152	5,597	5,606	5,578	-9	5,435
Western	4,099	4,407	4,181	-308	5,440	5,552	5,465	-112	4,886
W-A	+600	+965	+711		+664	+897	+732		+850
W-A as % of A	17.1	28.0	20.5		13.9	19.3	15.5		21.1

*U = Urban ‡R = Rural

Source: Derived from D.B.S. unpublished data.

TABLE B-11

Average Salaries, Secondary Teachers With 4-9 Years Experience, 1960-61

(Dollars)

Province or Region	Levels 2-3				Levels 4-6				All Levels
	U*	R‡	T	U-R	U	R	T	U-R	T
Nfld.	3,636	3,323	3,589	+313	4,403	4,488	4,421	-85	3,718
P.E.I.	3,385	2,875	3,181	+510	4,242	-	4,393	-	3,000
N.S.	3,179	3,001	3,081	+178	4,646	4,282	4,520	+364	4,067
N.B.	3,828	3,138	3,580	+690	4,972	4,405	4,853	+567	3,929
Atlantic	3,507	3,038	3,358	+469	4,566	4,392	4,547	+174	3,680
Man.	4,399	4,539	4,457	-140	5,866	5,251	5,807	+615	5,306
Sask.	4,676	4,437	4,533	+239	6,249	5,806	6,151	+443	5,373
Alta.	4,859	4,729	4,819	+130	6,127	6,234	6,144	-107	5,453
B.C.	5,094	5,060	5,085	+34	6,324	6,209	6,312	+115	6,052
Western	4,757	4,691	4,724	+66	6,142	5,875	6,104	+267	5,546
W-A	+1,250	+1,653	+1,366		+1,576	+1,483	+1,557		+1,866
W-A as % of A	35.6	54.4	40.7		34.5	33.8	34.2		50.7

*U = Urban ‡R = Rural

Source: D.B.S. Salaries and Qualifications of Teachers, 1960-61.

TABLE B-12

Average Salaries, Secondary Teachers With 4-9 Years Experience, 1966-67

(Dollars)

Province or Region	Levels 2-3				Levels 4-6				All Levels
	U*	R‡	T	U-R	U	R	T	U-R	T
Nfld.	4,478	4,519	4,488	-41	5,722	6,081	5,788	-359	4,932
P.E.I.	4,383	4,183	4,270	+200	6,193	5,747	6,012	+446	5,184
N.S.	4,308	4,051	4,164	+257	6,357	6,174	6,292	+183	5,707
N.B.	4,627	4,490	4,573	+137	6,562	5,860	6,422	+702	5,009
Atlantic	4,521	4,322	4,438	+199	6,273	6,075	6,217	+198	5,196
Man.	5,535	5,571	5,545	-36	7,279	7,221	7,270	+58	6,645
Sask.	5,782	5,215	5,420	+567	8,010	7,576	7,900	+434	6,935
Alta.	5,978	5,828	5,931	+150	7,281	7,598	7,321	-317	6,799
B.C.	6,248	6,089	6,212	+159	7,337	7,129	7,307	+208	7,063
Western	5,952	5,596	5,826	+356	7,395	7,356	7,389	+39	6,888
W-A	+1,431	+1,274	+1,388		+1,122	+1,281	+1,172		+1,692
W-A as % of A	31.7	29.5	31.3		17.9	21.1	18.9		32.6

*U = Urban ‡R = Rural

Source: Derived from D.B.S. unpublished data.

TABLE B-13

Dollar and Per Cent Increases in Average Salaries, Beginning Secondary Teachers, 1961-67

Province or Region	Levels 2-3				Levels 4-6			
	U*	R‡	Total		U	R	Total	
	%	%	%	$	%	%	%	$
Nfld.	6.3	-	5.7	176	17.7	31.0	20.8	784
P.E.I.	-	-0.7	-8.4	-313	14.5	-	18.7	652
N.S.	50.6	60.6	54.3	1,223	31.6	40.7	35.6	1,272
N.B.	21.6	24.5	24.4	694	25.4	28.3	26.4	1,001
Atlantic	25.6	22.0	16.8	498	27.1	30.8	29.6	1,081
Man.	33.8	16.2	30.1	1,018	23.8	31.7	24.3	1,051
Sask.	24.4	28.9	27.8	899	28.3	33.1	28.9	1,313
Alta.	-0.2	21.1	4.7	179	10.0	20.3	12.7	575
B.C.	22.2	21.0	22.3	914	17.6	20.2	17.4	828
Western	11.4	19.8	15.0	545	19.1	26.0	20.5	930

*U = Urban ‡R = Rural

Source: Tables B-9 and B-10.

TABLE B-14

Dollar and Per Cent Increases in Average Salaries, Secondary Teachers 4-9 Years Experience, 1961-67

Province or Region	Levels 2-3				Levels 4-6			
	U*	R‡	Total		U	R	Total	
	%	%	%	$	%	%	%	$
Nfld.	23.2	36.0	25.0	899	30.0	35.5	30.9	1,367
P.E.I.	29.5	45.5	34.2	1,089	46.0	-	36.9	1,619
N.S.	35.5	35.0	35.2	1,083	36.8	44.2	39.2	1,772
N.B.	20.9	43.1	27.7	993	32.0	33.0	32.3	1,569
Atlantic	28.9	42.3	32.2	1,080	37.4	38.3	36.7	1,670
Man.	25.8	22.7	24.4	1,088	24.1	37.5	25.2	1,463
Sask.	23.7	17.5	19.6	887	28.2	30.5	28.4	1,749
Alta.	23.0	23.2	23.1	1,112	18.8	21.9	19.2	1,177
B.C.	22.7	20.3	22.2	1,127	16.0	14.8	15.7	995
Western	25.1	19.3	23.3	1,102	20.4	25.2	21.1	1,285

*U = Urban ‡R = Rural

Source: Tables B-11 and B-12.

TABLE B-15

Newfoundland
Interim Salary Scale (Dollars), 1967-68

Certificate	1 yr.	2 yr.	3 yr.	4 yr.	5 yr.	6 yr.	7 yr.	8 yr.	9 yr.	10 yr.	11 yr.
I	3,312	3,496	3,680	3,864	3,956						
II	3,864	4,140	4,324	4,508	4,692	4,784					
III	4,508	4,784	4,960	5,244	5,428	5,612	5,704				
IV	5,244	5,520	5,796	6,072	6,256	6,440	6,624	6,716			
V	6,072	6,348	6,624	6,900	7,176	7,360	7,544	7,728	7,820		
VI	6,992	7,268	7,544	7,820	8,096	8,372	8,556	8,740	8,924	9,016	
VII	8,004	8,280	8,556	8,832	9,108	9,384	9,660	9,844	10,028	10,212	10,304

Source: Newfoundland Teachers Ass'n., May 26, 1967.

TABLE B-16

New Brunswick
Memorandum of Agreement

ARTICLE I- SALARY SCHEDULE

1.01 This schedule shall become effective January 1, 1967 and continue in effect until June 30, 1968.

1.02 Scale

TL	CI	CII	CIII	CIV	CV	CVI
2,800	3,200	3,600	4,200	5,200	4,700	6,300
3,000	3,400	3,875	4,475	5,524	6,050	6,700
3,200	3,600	4,150	4,750	5,850	6,400	7,100
3,400	3,800	4,425	5,025	6,175	6,750	7,500
3,600	4,000	4,700	5,300	6,500	7,100	7,900
3,800	4,200	4,975	5,575	6,825	7,450	8,300
4,000	4,400	5,250	5,850	7,150	7,800	8,700
			6,125	7,475	8,150	9,100
			6,400	7,800	8,500	9,500
				8,125	8,850	9,900
				8,450	9,200	10,300
6x200	6x200	6x275	8x275	10x325	10x350	10x400

1. L.S.IV with no teacher's licence - $500 less than CIV.

2. T.P. - minimum $2,200 - four $150 annual increments - Maximum $2,800.

3. 3rd Class - minimum $1,600 - four $150 annual increments - Maximum $2,200.

TABLE B-17

A. County of Leduc No. 25 (Alberta) Salary Scale

Years of Teaching Experience	Years of Teacher Education					
	One*	Two	Three	Four	Five	Six
0	3,900	4,500	5,200	6,300	6,700	7,100
1	4,110	4,755	5,490	6,660	7,060	7,460
2	4,320	5,010	5,780	7,020	7,420	7,820
3	4,530	5,265	6,070	7,380	7,780	8,180
4	4,740	5,520	6,360	7,740	8,140	8,540
5	4,950	5,775	6,650	8,100	8,500	8,900
6	5,160	6,030	6,940	8,460	8,860	9,260
7	5,370	6,285	7,230	8,820	9,220	9,620
8	5,580	6,540	7,520	9,180	9,580	9,980
9	5,790	6,795	7,810	9,540	9,940	10,340
10	6,000	7,050	8,100	9,900	10,300	10,700
11				10,150	10,550	11,000
12				10,400	10,800	11,300
	210x10	255x10	290x10	360x10	360x10	360x10
				250x2	250x2	300x2

B. Calgary Roman Catholic Separate School District No. 1 Salary Scale

Years of Teaching Experience	Years of Teacher Education					
	A*	B	C	D	E	F
0	-	4,250	4,850	6,350	6,850	7,350
1	3,850	4,550	5,150	6,700	7,200	7,700
2	4,150	4,850	5,450	7,050	7,550	8,050
3	4,450	5,150	5,750	7,400	7,900	8,400
4	4,750	5,450	6,050	7,800	8,300	8,800
5	5,050	5,750	6,350	8,200	8,700	9,200
6	5,350	6,050	6,650	8,600	9,100	9,600
7	5,650	6,350	6,950	9,000	9,500	10,000
8	5,950	6,650	7,250	9,400	9,950	10,450
9	6,250	6,950	7,550	9,800	10,400	10,900
10				10,200	10,850	11,350
11				10,600	11,300	11,800

* One year of training beyond senior matriculation.

TABLE B-18

A. Medicine Hat School District No. 76 Salary Scale

Years of Teaching Experience	Years of Training					
	One*	Two	Three	Four	Five	Six
0	4,000	4,200	5,000	6,150	6,450	6,850
1	4,000	4,600	5,400	6,650	6,950	7,350
2	4,000	5,000	5,800	7,150	7,450	7,850
3	4,000	5,400	6,200	7,650	7,950	8,350
4	4,300	5,800	6,600	8,150	8,450	8,850
5	4,600	6,200	7,000	8,450	8,750	9,150
6	4,900	6,400	7,200	8,750	9,050	9,450
7	5,200	6,600	7,400	9,050	9,350	9,750
8	5,500	6,800	7,600	9,350	9,650	10,050
9	5,800	7,000	7,800	9,650	9,950	10,350
10	6,200	7,200	8,000	9,950	10,250	10,650
11				10,250	10,550	10,950
12				10,450	10,750	11,150

B. County of Newell No. 4 (Alberta) Salary Scale

Years of Teaching Experience	Years of Training					
	One*	Two	Three	Four	Five	Six
0	3,700	4,500	5,300	6,200	6,600	7,000
1	3,930	4,770	5,570	6,600	7,000	7,400
2	4,160	5,040	5,840	7,000	7,400	7,800
3	4,390	5,310	6,110	7,400	7,800	8,200
4	4,620	5,580	6,380	7,800	8,200	8,600
5	4,850	5,850	6,650	8,200	8,600	9,000
6	5,080	6,120	6,920	8,600	9,000	9,400
7	5,310	6,390	7,190	9,000	9,400	9,800
8	5,540	6,660	7,460	9,400	9,800	10,200
9	5,770	6,930	7,730	9,800	10,200	10,600
10	6,000	7,200	8,000	10,200	10,600	11,000

* One year of training beyond senior matriculation.

APPENDIX C

TABLES

C-1 Full-Time Enrolment Beyond Senior Matriculation Year, Universities and Colleges, by Province, 1965-66 to 1967-68

2 Full-Time Enrolments in Universities and Colleges (Including Teachers' Colleges) in Canada and the Atlantic Provinces, 1950-51 to 1967-68

3 Full-Time Enrolment of Post-Secondary Students in Technician Diploma Courses at Technical Institutes, Canada and the Atlantic Provinces, 1951-52 to 1967-68

APPENDIX C

LIMITATIONS OF DATA AND ASSUMPTIONS UNDERLYING POST-SECONDARY ENROLMENT FORECASTS

Because we are basing enrolment forecasts on the 18-24 age group, given the much wider age-range of part-time and summer-time students, we must limit ourselves to full-time enrolments, winter session.

Interprovincial comparisons of university enrolment percentages have been made difficult by the fact that, while universities in some provinces admit students with junior matriculation standing, institutions in other provinces[1] admit only after senior matriculation. In Ontario some institutions admit students with junior matriculation standing while others admit students only after the senior matriculation year.

Another reason for difficulties in comparison is that in some provinces[2] all elementary- and secondary-teacher training is undertaken by the universities with courses either counting for credit toward a degree or requiring a university entrance standing for admission. In other provinces some students training to be elementary school teachers attend separately-established teacher-training institutions which have not necessarily the same entrance requirements as university faculties of education.

Still other reasons include an increasing number of students coming from outside Canada - nearly 13,000 in 1966-67 - and interprovincial migration of Canadian students, especially those taking professional and graduate courses who are attending universities outside their usual province of residence.

Table C-1

In an attempt to improve the comparability between provinces by eliminating university students in the year following junior matriculation from the calculations, Table C-1 relates total full-time enrolment above the senior matriculation level to the provincial population aged 18-24. About four-fifths of all full-time university-grade students are in this age group.

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[1] Alberta, Saskatchewan and Manitoba (from 1964-65).

[2] British Columbia, Alberta, Saskatchewan, Manitoba (from 1965-66), Québec (in some cases), Prince Edward Island and Newfoundland.

TABLE C-1

Full-Time Enrolment Beyond Senior Matriculation Year, Universities and Colleges, by Province, 1965-66 to 1967-68

Academic Year and Province	(1) Total Full-Time Enrolment	(2) Enrolment in First Year Following Junior Matriculation*	(3) Enrolment Beyond Senior Matriculation (1)-(2)	(4) Population Aged 18-24‡	(5) (3) as % of (4)
	no.	no.	no.	000	%
1967-68					
Newfoundland	4,473	1,675	2,798	59.8	4.7
Prince Edward Island	1,369	587	782	11.7	6.7
Nova Scotia	10,501	1,747	8,754	84.9	10.3
New Brunswick	7,927	2,516	5,411	71.6	7.5
Québec:					
English-language institutions	23,623	5,860	17,763	n.a.	n.a.
French-language institutions	58,987	14,000#	44,987**	n.a.	n.a.
Total Québec	82,610	19,860#	62,750**	724.0	8.7**
Ontario	79,089	1,292	77,797	764.2	10.2
Manitoba	13,426	-	13,426	104.5	12.8
Saskatchewan	12,697	34	12,663	100.2	12.6
Alberta	19,688	131	19,557	158.0	12.4
British Columbia	29,427	9,637	19,790	206.6	9.6
Total Canada	261,207	37,479	223,728	2,290.2‡‡	9.8**
1966-67					
Newfoundland	3,893	1,649	2,244	55.7	4.0
Prince Edward Island	1,139	571	568	10.9	5.2
Nova Scotia	9,806	1,770	8,036	80.2	10.0
New Brunswick	6,862	2,194	4,668	66.4	7.0
Québec:					
English-language institutions	21,063	5,580	15,483	n.a.	n.a.
French-language institutions	54,007	9,718#	44,289**	n.a.	n.a.
Total Québec	75,070	15,298#	59,772**	691.0	8.7**
Ontario	68,589	1,402	67,187	711.3	9.4
Manitoba	12,389	-	12,389	99.9	12.4
Saskatchewan	11,577	69	11,508	94.6	12.2
Alberta	16,983	125	16,858	150.0	11.2
British Columbia	26,364	8,756	17,608	189.8	9.3
Total Canada	232,672	31,834	200,838	2,154.8‡‡	9.3**
1965-66					
Newfoundland	3,168	1,424	1,744	52.8	3.3
Prince Edward Island	924	463	461	10.0	4.6
Nova Scotia	9,457	2,261	7,196	79.5	9.1
New Brunswick	6,371	2,090	4,281	63.1	6.8
Québec:					
English-language institutions	18,966	5,286	13,680	n.a.	n.a.
French-language institutions	48,350	9,660#	38,690**	n.a.	n.a.
Total Québec	67,316	14,946#	52,370**	659.5	7.9**
Ontario	58,983	1,680	57,303	664.2	8.6
Manitoba	11,069	-	11,069	97.0	11.4
Saskatchewan	10,707	25	10,682	91.5	11.7
Alberta	14,749	96	14,653	143.7	10.2
British Columbia	23,144	7,709	15,435	173.5	8.9
Total Canada	205,888	30,694	175,194	2,039.5‡‡	8.6**

* This would be the equivalent of Grade 12 in Newfoundland, Nova Scotia, Québec, Manitoba, Saskatchewan, and Alberta, and Grade 13 in Ontario and British Columbia. The high schools in Prince Edward Island and New Brunswick do not offer courses beyond the junior matriculation year.

‡ Estimated as of June 1, 1965 for 1965-66, June 1, 1966 for 1966-67 and June 1, 1967 for 1967-68. The figures are the sum of estimates for individual years of age from 18 to 24 inclusive prepared by the Census Division, D.B.S.

# The figure given for Québec is slightly low as some students who entered certain faculties of French-language universities after completing the equivalent of junior matriculation are not included.

** The figure given for Québec is slightly high as it includes some students who entered certain faculties of French-language universities in Québec after completing the equivalent of junior matriculation.

‡‡ The total for Canada includes the Yukon and the North West Territories.

Source: D.B.S. Survey of Higher Education Part I: Fall Enrolment in Universities and Colleges 1967-68.

Table C-1 shows that 43 per cent of the total enrolment in Prince Edward Island, 37 per cent in Newfoundland and 32 per cent in New Brunswick was in the equivalent of the senior matriculation year in 1967-68. The high schools in these provinces (with the exception of one or two in Newfoundland) teach only up to the end of the junior matriculation year. In contrast, in Nova Scotia, where many high schools give the senior matriculation year and where students may begin university after junior or senior matriculation,1/ only 17 per cent was in the equivalent of the senior matriculation year.

In 1967-68 the Prairie Provinces ranked highest when enrolment beyond the senior matriculation level was related to provincial population aged 18-24. Three of the four Atlantic Provinces (exclusive of Nova Scotia) ranked lowest. The percentages for Québec, and for Canada as a whole, are slightly high because some senior-matriculation-equivalent enrolment, as explained in a footnote, was included.

Table C-2

Table C-2 provides data by place of residence and place of enrolment for Canada and for each of the Atlantic Provinces. It also shows residents of each province attending university anywhere in Canada as a percentage of the province's 18-24 age group. Unlike Table C-1, it includes enrolments in teachers' colleges, and it has been assumed that the teachers' college enrolments in each province are identical to enrolments from that province. Data are not available for enrolments of Canadian students in foreign universities, but enrolments of foreign students in Canada are shown by province.

The inclusion of students in their senior matriculation year in Table C-2 has a relatively large effect on total enrolments of students from the Atlantic Provinces, especially in the case of students from Newfoundland, Prince Edward Island and New Brunswick. Between 1965-66 and 1966-67, while enrolments in Nova Scotia beyond the senior matriculation year advanced from 7,196 to 8,036, those of students in their senior matriculation year declined from 2,261 to 1,770, reflecting the decision of Dalhousie to demand senior matriculation for admission.

Our forecasts assume a continuation of the 1967-68 distribution of students in their senior matriculation year between school and university.

In Table C-2, the inclusion of teachers' colleges reflects the view that in Nova Scotia and New Brunswick, where separate teachers' colleges now exist, these institutions will

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1/ Except Dalhousie University, where senior matriculation is required.

TABLE C-2

Full-Time Enrolments in Universities and Colleges (Including Teachers' Colleges) in Canada and the Atlantic Provinces, 1950-51 to 1967-68

Province and Year	(1) Residents Enrolled in Province	(2) Residents Enrolled in Other Provinces	(3) Residents Enrolled in Canada (1) + (2)	(4) Canadian Non-Residents Enrolled	(5) Total Canadian Enrolment (1) + (4)	(6) Foreign Students Enrolled	(7) Total Full-Time Enrolment (5) + (6)	(8) Population Age 18-24	(9) (6) as % of (7)	(10) (3) as % of (5)	(11) (3) as % of (8)
	no.	no.	no.	no.	no.	no.	no.	no.	%	%	%
Newfoundland											
1950-51	380	382	762	-	380	-	380	42,300	-	200.5	1.8
1955-56	577	455	1,032	-	577	-	577	42,500	-	178.9	2.4
1960-61	1,400	505	1,905	-	1,400	-	1,400	45,100	-	136.1	4.2
1961-62	1,757	554	2,311	-	1,757	-	1,757	45,800	-	131.5	5.0
1962-63	1,983	549	2,532	-	1,983	15	1,998	47,800	0.8	126.7	5.3
1963-64	2,206	629	2,835	23	2,229	25	2,254	49,400	1.1	127.2	5.7
1964-65	2,582	607	3,189	34	2,616	36	2,652	50,900	1.4	121.9	6.3
1965-66	3,046	659	3,705	49	3,095	73	3,168	52,800	2.3	119.7	7.0
1966-67	3,776	637	4,413	62	3,838	55	3,893	55,700	1.4	115.0	7.9
1967-68	4,333	650	4,983	77	4,410	63	4,473	59,800	1.4	113.0	8.3
Prince Edward Island											
1950-51	329	314	643	27	356	5	361	11,100	1.4	180.6	5.8
1955-56	259	275	534	54	313	8	321	9,400	2.5	170.6	5.7
1960-61	484	300	784	96	580	61	641	9,500	9.5	135.2	8.3
1961-62	644	330	974	91	735	63	798	9,500	7.9	132.5	10.3
1962-63	587	305	892	121	708	72	780	9,400	9.2	126.0	9.5
1963-64	543	345	888	169	712	76	788	9,700	9.6	124.7	9.2
1964-65	645	375	1,020	166	811	70	881	9,600	8.0	125.8	10.6
1965-66	745	369	1,114	128	873	51	924	10,000	5.5	127.6	11.1
1966-67	934	426	1,360	154	1,088	51	1,139	10,900	4.5	125.0	12.5
1967-68	1,122	446	1,568	169	1,291	78	1,369	11,700	5.7	121.5	13.4
Nova Scotia											
1950-51	2,812	594	3,406	1,235	4,047	237	4,284	69,700	5.5	84.2	4.9
1955-56	3,102	663	3,765	1,303	4,405	368	4,773	69,200	7.7	85.5	5.4
1960-61	4,155	894	5,049	1,570	5,725	588	6,313	72,400	9.3	88.2	7.0
1961-62	4,190	942	5,132	1,769	5,959	875	6,834	72,900	12.8	86.1	7.0
1962-63	4,495	923	5,418	2,030	6,525	940	7,465	75,600	12.6	83.0	7.2
1963-64	5,061	962	6,023	2,324	7,385	962	8,347	76,900	11.5	81.6	7.8
1964-65	5,676	987	6,663	2,364	8,040	1,043	9,083	79,300	11.5	82.9	8.4
1965-66	6,427	1,055	7,482	2,568	8,995	1,017	10,012	79,500	10.2	83.2	9.4
1966-67	7,007	1,125	8,132	2,518	9,525	859	10,384	80,200	8.3	85.4	10.2
1967-68	7,663	1,256	8,919	2,599	10,262	894	11,156	84,900	8.0	86.9	10.5
New Brunswick											
1950-51	1,476	971	2,447	694	2,170	78	2,248	56,100	3.5	112.8	4.4
1955-56	1,774	834	2,608	992	2,766	169	2,935	53,900	5.8	94.3	4.8
1960-61	2,476	891	3,367	1,882	4,358	223	4,581	55,800	4.9	77.3	6.0
1961-62	2,791	958	3,749	2,084	4,875	265	5,140	56,400	5.2	76.9	6.7
1962-63	3,159	1,032	4,191	2,035	4,194	295	5,489	58,400	5.4	80.7	7.2
1963-64	3,812	1,122	4,934	2,037	5,849	305	6,154	59,600	5.0	84.4	8.3
1964-65	4,384	1,160	5,544	2,139	6,523	321	6,844	61,000	4.7	85.0	9.1
1965-66	5,073	1,242	6,315	2,028	7,101	351	7,452	63,100	4.7	88.9	10.0
1966-67	5,514	1,343	6,857	2,077	7,591	385	7,976	66,400	4.8	90.3	10.3
1967-68	6,323	1,441	7,764	2,301	8,624	444	9,068	71,600	4.9	90.0	10.8
Canada											
1950-51	65,941	8,314	74,255			3,188	77,443	1,540,500	4.1		4.8
1955-56	71,243	7,927	79,170			4,385	83,555	1,564,500	5.3		5.1
1960-61	119,241	11,013	130,254			7,251	137,505	1,689,100	5.3		7.7
1961-62	132,661	12,351	145,012			7,900	152,912	1,712,600	5.2		8.5
1962-63	141,909	12,989	154,898			8,518	163,416	1,770,100	5.2		8.8
1963-64	162,914	14,267	177,181			9,490	186.671	1,848,800	5.1		9.6
1964-65	176,331	14,832	191,163			10,154	201,317	1,941,700	5.0		9.9
1965-66	198,435	15,911	214,346			11,284	225,630	2,039,500	5.0		10.5
1966-67	225,617	16,977	242,594			12,943	255,537	2,154,800	5.1		11.3
1967-68	250,755	18,485	269,240			15,356	284,596	2,290,200	5.4		11.8

Source: Calculated from: D.B.S. Survey of Higher Education, Part II, 1963-64 to 1967-68; Economic Council of Canada, Enrolment of Schools and Universities 1951-52 to 1975-76, Staff Study No. 20, 1967; Canada Year Book, 1954; data supplied by D.B.S. Census Division and D.B.S. Education Division.

be intregrated into the university system, with degree credit courses and university entrance requirements.

Table C-2 shows that in Newfoundland no foreign students were registered prior to 1962-63, and that since then they have averaged only 1.4 per cent of total enrolments, ranging between a high of 2.3 per cent and a low of 0.7 per cent. In Prince Edward Island numbers of foreign students throughout most of the 1950's were insignificant, but since 1960-61 they have ranged between 9.6 per cent and 4.5 per cent of total enrolments, with an average of 7.4 per cent. In Nova Scotia enrolments of foreign students rose from 5.5 per cent in 1950-51 to 9.3 per cent in 1960-61, since then ranging between 12.8 and 8.0 per cent, with an average of 10.4 per cent. Over this seven-year period the percentage declined almost continuously, with the highest percentage being in 1961-62 and the lowest in 1967-68. In New Brunswick the percentage of foreign students has ranged between 3.5 per cent and 5.8 per cent since 1950-51 and between 4.7 per cent and 5.4 per cent since 1960-61, with an average over the latter period of 5.0 per cent. The percentage of foreign students enrolled in Canada as a whole since 1950-51 has ranged between 4.1 per cent and 5.4 per cent, and since 1960-61 the range has been between 5.0 per cent and 5.4 per cent, with an average for this period of 5.2 per cent.

Future enrolments of foreign students depend very much on government and university policy. While the percentages for Newfoundland have been significantly below the corresponding Canadian percentages, Newfoundland's role as an educator of foreign students is a very new one. The percentages for Nova Scotia have been significantly above the Canadian percentages, but the gap between these percentages has been narrowing. It seems not unreasonable to assume that, by 1976-77, each of the Atlantic Provinces will have moved to a position where 5 per cent of its total enrolments are of foreign students. This percentage is assumed to hold in 1981-82 and again in 1986-87. The percentage of foreign students in 1971-72 is arrived at through interpolation between 1967-68 and 1976-77.

No students from other parts of Canada were enrolled in Newfoundland prior to 1963-64, and since then their numbers have been roughly the same as those of foreign students. Newfoundlanders enrolled elsewhere in Canada, on the other hand, were almost as numerous as Newfoundlanders enrolled in their own province until the late 1950's. While the absolute number of enrolments outside Newfoundland has since continued to increase to a peak in 1965-66, the ratio of enrolment of Newfoundlanders outside the province to those of Newfoundlanders within the province has declined continuously to about 1:7 in 1967-68. Newfoundlanders enrolled anywhere in Canada as a percentage of Canadians enrolled in Newfoundland declined from 200 per cent in 1950-51 to 136 per cent in 1960-61 to 113 per cent in 1967-68.

Students from other parts of Canada enrolled in Prince Edward Island rose from only 27 in 1950-51 to 96 in 1960-61 and a peak of 169 in 1963-64 and again in 1967-68. Enrolments of Islanders elsewhere in Canada continued to grow but less rapidly than enrolments of Islanders in Prince Edward Island. Throughout most of the 1950's numbers of Islanders enrolled within and outside the province were roughly the same, but in 1960-61 they were 484 and 300 respectively, and in 1967-68 they were 1,122 and 446 respectively. Islanders enrolled anywhere in Canada as a percentage of Canadians enrolled in Prince Edward Island declined from 181 in 1950-51 to 135 in 1960-61 and 121 in 1967-68.

The number of Nova Scotians enrolled elsewhere in Canada, rising almost continuously, more than doubled between 1950-51 and 1967-68. Canadians from outside the province enrolled in Nova Scotian institutions also more than doubled during this period. Nova Scotians enrolled anywhere in Canada as a percentage of Canadians enrolled in Nova Scotia increased from 84 per cent in 1950-51 to 88 per cent in 1960-61. The percentage then moved in a range between about 82 per cent in 1963-64 and 87 per cent in 1967-68.

Between 1950-51 and 1961-62 students from elsewhere in Canada enrolled in New Brunswick institutions increased from 694 to 2,084. There has since been an irregular increase to 2,301 in 1967-68. Between 1950-51 and 1960-61 New Brunswickers enrolled elsewhere in Canada declined from 971 to 891. There followed a continuous advance to 1,441 in 1967-68. The number of New Brunswickers enrolled anywhere in Canada expressed as a percentage of Canadians enrolled in New Brunswick was 113 per cent in 1950-51, but by 1961-62 had declined to 77 per cent. Subsequently it rose to 90 per cent in 1966-67, where it remained in 1967-68.

As enrolments rise and costs per student increase, it seems reasonable to expect that provincial governments will resist educating more students from other parts of Canada than the number of local students seeking education in other provinces. In view of past trends, it seems reasonable to assume that, by 1976-77, the number of a province's enrolments anywhere in Canada will equal the number of Canadians enrolled in that province. This position is assumed to hold in 1981-82 and 1986-87. The percentage for 1971-72 is arrived at by interpolation between those of 1967-68 and 1976-77.

Enrolments of Newfoundlanders anywhere in Canada rose from 1.8 per cent of the 18-24 age group in 1950-51 to 2.4 per cent in 1955-56 and 4.2 per cent in 1960-61. This percentage has since advanced continuously to 8.3 per cent in 1967-68.

The corresponding percentage in Prince Edward Island declined from 5.8 per cent in 1950-51 to 5.7 per cent in 1955-56, but it rose to 8.3 per cent in 1960-61. Since that year it has risen irregularly to 13.4 per cent in 1967-68.

The corresponding percentage for Nova Scotia rose from 4.9 per cent in 1950-51 to 5.4 per cent in 1955-56 and 7.0 per cent in 1960-61. Since that year it has risen continuously to 10.5 per cent in 1967-68.

In New Brunswick the percentage rose from 4.4 per cent in 1950-51 to 4.8 per cent in 1955-56 and 6.0 per cent in 1960-61. Since then it has risen continuously to 10.8 per cent in 1967-68.

Meanwhile, the Canadian percentage increased from 4.8 per cent in 1950-51 to 5.1 per cent in 1955-56 and 7.7 per cent in 1960-61. Since then it has risen steadily to 11.8 per cent in 1967-68.

Because number of enrolments and population of university age are both relatively small in Prince Edward Island, that province's percentages have fluctuated rather widely. The 1.6 percentage points by which the Island's percentage exceeded that for Canada in 1967-68 should not be considered too seriously. In this year Nova Scotia and New Brunswick were respectively 1.3 and 1.0 percentage points below the Canadian average. It seems reasonable to assume that by 1976-77 the gaps between individual Maritime Provinces and Canada will have disappeared. It is also assumed that in 1981-82 and again in 1986-87 each of the Maritime Provinces will have the same enrolment as a percentage of the population 18-24, as Canada as a whole. Figures for 1971-72 are reached through interpolation between those for 1967-68 and 1976-77. The ratio in Newfoundland has been running a little over five years behind the Canadian average, and it is assumed that by 1981-82 that province will reach the Canadian percentage for 1976-77. By 1986-87 Newfoundland should reach the Canadian percentage for 1981-82. Figures for 1971-72 and 1976-77 are reached through interpolation between those for 1967-68 and 1981-82.

Sheffield and Also Illing and Zsigmond[1] base their projections of the Canadian percentage on the United States percentage a decade earlier. This gives a Canadian percentage of 18.6 per cent for 1976-77, 20.9 per cent for 1981-82 and 23.5 per cent for 1986-87.

Table C-3

Table C-3 gives full-time enrolments in technician diploma courses (usually of two or three years' duration) for Canada and the Atlantic Provinces for the period from 1951-52 to 1967-68.

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[1] E.F. Sheffield, Enrolment in Canadian Universities and Colleges to 1976-77, Ottawa, Association of Universities and Colleges, 1966; and W.M. Illing and Z.E. Zsigmond, Enrolment in Schools and Colleges 1951-52 to 1975-76, Ottawa, Economic Council of Canada, 1967.

TABLE C-3

Full-Time Enrolment of Post-Secondary Students in Technician Diploma Courses at Technical Institutes, Canada and the Atlantic Provinces, 1951-52 to 1967-68

Academic Year	Canada			Newfoundland			Nova Scotia			New Brunswick		
	(1) Enrolment	(2) Population 18-24	(3) (1) as % of (2)	(1) Enrolment	(2) Population 18-24	(3) (1) as % of (2)	(1) Enrolment	(2) Population 18-24	(3) (1) as % of (2)	(1) Enrolment	(2) Population 18-24	(3) (1) as % of (2)
	no.	no.	%	no.	no.	%	no.	no.	%	no.	no.	%
1951-52	2,800	1,508,400	0.2	-	n.a.	-	-	n.a.	-	-	n.a.	-
1956-57	10,400	1,573,300	0.7	-	n.a.	-	-	n.a.	-	-	n.a.	-
1961-62	20,400	1,708,300	1.2	-	n.a.	-	32	72,900	-	78	56,400	0.1
1962-63	20,900	1,765,700	1.2	-	n.a.	-	294	75,600	0.4	149	58,400	0.3
1963-64	23,800	1,844,200	1.3	42	49,400	0.1	76	76,900	0.1	207	59,600	0.4
1964-65	21,900	1,937,000	1.1	181	50,900	0.4	104	79,300	0.1	275	61,000	0.5
1965-66	20,600	2,034,800	1.0	397	52,800	0.8	224	79,500	0.3	319	63,100	0.5
1966-67	31,000	2,149,800	1.4	541	55,700	1.0	350	80,200	0.4	441	66,400	0.7
1967-68	36,200	2,285,500	1.6	639	59,800	1.1	450	84,900	0.5	445	71,600	0.6

Source: Economic Council of Canada, Enrolment in Schools and Universities 1951-52 to 1975-76, Staff Study No. 20, 1967; D.B.S. Education Division and D.B.S. Census Division.

Between 1951-52 and 1963-64 Canadian enrolments as a percentage of the 18-24-year age group advanced from 0.2 per cent to 1.3 per cent. Since then there has been an irregular advance to 1.6 per cent in 1967-68.

Post-secondary technician training in Newfoundland was inaugurated in the school year 1963-64 with the opening of two institutions at St. John's: the College of Trades and Technology and the College of Fisheries, Navigation, Marine Engineering and Electronics. Forty-two enrolments in the first year grew quickly to 639 in 1967-68. In the latter year enrolments came to 1.1 per cent of the youth population.

In Prince Edward Island, post-secondary technician training is expected to become available in the near future.

In Nova Scotia and New Brunswick, post-secondary technician training did not become available until the late 1950's. Such training is available at the Nova Scotia Land Survey Institute in Lawrencetown, Annapolis County, N.S., which opened in 1949. The Nova Scotia Institute of Technology in Halifax was opened in 1963-64. In New Brunswick, the New Brunswick Institute of Technology at Moncton was opened in 1948, and was expanded and renovated in the 1960's. The Saint John Technical and Trade Institute was established in 1963-64. In Nova Scotia in 1961-62 there were only 32 enrolments, and enrolments in subsequent years fluctuated very widely. However, by 1967-68 the number had grown to 450, or 0.5 per cent of the youth population. In New Brunswick in 1961-62 there were 78 enrolments constituting 0.1 per cent of the youth population. There was a more regular advance than in Nova Scotia, to 441 and 445 respectively in 1966-67 and 1967-68. These enrolments constituted 0.7 per cent and 0.6 per cent of the respective youth populations.

During the 1960's, there has been a large expansion in the number of student places and in the variety of courses offered in all three provinces, accelerated by federal-provincial financing under the Technical and Vocational Training Agreements. It would not be legitimate to extrapolate the very short trends available. Illing and Zsigmond[1] assume that, for Canada, 3.7 per cent of the population 18-24 years of age will be enrolled full-time in 1975-76. In view of the figures for the past few years, it seems not unreasonable to assume that Newfoundland will trail Canada by five years and that Nova Scotia and New Brunswick will trail Canada by 10 years. It is also assumed that Prince Edward Island will trail Canada by 10 years. Adjusting the percentage upward to 3.9 per cent for Canada in 1976-77, this would be the percentage for the Maritime Provinces in 1986-87 and for Newfoundland in 1981-82. Percentages for intervening years are reached through interpolation between 3.9 per cent and the respective 1967-68 actual percentages.

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[1] *op. cit.*

Throughout the period, it is assumed that post-secondary enrolments in technicial diploma courses in each province equal enrolments of residents of the province.